VIEWS & VISIONS

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Spring 2011

Oil & Gas:

Powering Our Future!

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In this issue ...

Oil & Natural Gas: Powering Our Future!

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Oil & Natural Gas: Powering Our Future!

Thomas A. Heywood
Bowles Rice McDavid Graff & Love LLP

FROM OUR
MANAGING
PARTNER

Tom Heywood is Managing Partner of Bowles Rice and a former chief of staff to the Honorable Gaston Caperton, Governor of the State of West Virginia. He has significant experience in health care, corporate, finance and commercial law, and is recognized as one of the "Best Lawyers in America."

Mr. Heywood is active in the community and in various West Virginia business and trade associations. He serves on the boards of many charitable organizations, including Vision Shared, Imagine West Virginia, Discover the Real West Virginia Foundation, Thomas Memorial Hospital, West Virginia University Hospitals, the Clay Center and the Kanawha County Library Foundation.

Mr. Heywood was recognized for his many contributions to the legal profession and the community by being named a Fellow of the American Bar Association and a recipient of the 2010 "Who's Who in West Virginia Business" award.

The opportunity of a lifetime. That is what we face today in our region, thanks to new production techniques that have unleashed the incredible potential of the Marcellus Shale natural gas formation, which underlies much of New York, Pennsylvania and West Virginia. Here are some facts that offer food for thought:

- Most international industry analysts are now declaring that the Marcellus Shale represents the largest formation of natural gas in the world, after Qatar.
- Modern production techniques that have unlocked the United States shale formations have permanently changed the world energy equation and geopolitics.
- Liquefied natural gas terminals being built in the United States for **import** of natural gas from other nations are now being marketed for **export** of natural gas from the United States to the rest of the world.
- "Wet" gas from the Marcellus Shale offers the prospect of the **revitalization of the chemical industry in Ohio, West Virginia and Pennsylvania**. Methane is a vital feedstock for the chemical industry, and can be tapped for this purpose if we develop the catalytic cracking capacity in our region to do so. At least two new catalytic cracker facilities, requiring investments of $1 to $3 million each, are envisioned for West Virginia. A bill passed this year by the West Virginia Legislature should help make one or more crackers in West Virginia a reality.
- In communities across the United States which have shale formations, Americans who have lived on the family farm for generations are becoming overnight millionaires by simply leasing their gas rights. The Marcellus region offers prosperity in our lifetimes beyond our wildest imagination. An **abundance mentality** will take some getting used to, as we in Appalachia have labored for years under a scarcity mentality.
- The level of economic activity in southwestern Pennsylvania today dwarfs that of Pittsburgh during the glory days of steel.
- Investments in oil and gas in recent years are valued in the billions, and more such investments are no doubt on the horizon. Think Exxon/XTO, Chesapeake, Statoil and CNOOC.

This is truly the opportunity of a lifetime, for businesses and individuals across our region.

To realize this opportunity will take dedication, focus and commitment. For example, if we do not aggressively pursue the location and development of one or more catalytic crackers in our region, all of our methane could be shipped overseas, and our region and nation could lose an opportunity to revitalize our domestic chemical industry.

As our elected leaders have noted, we must be sure to responsibly develop our newly accessible resource, paying careful attention to environmental and public policy considerations related to the development, production and delivery of natural gas. These issues are being actively considered by legislatures across our region, and will continue to be addressed in the years ahead. It is incumbent on all of us to become actively involved in this process, to make sure that thoughtful and appropriate policy is developed in respect of this remarkable natural resource.

In this edition of *Views & Visions*, Bowles Rice is pleased to present the thoughts of leaders from across our region about the opportunities we have today, and how to best capitalize on those opportunities.

We at Bowles Rice look forward to working actively with the authors in this edition, and many other leaders across our region, to realize the manifold benefits that await us as we enter the golden era in Appalachia's rich oil and gas history. Happy reading!

Glossary: Oil & Gas Terminology

API – American Petroleum Institute

API Number – A unique identifying number for each oil and gas well drilled in the United States.

Bcf – The abbreviation for billion cubic feet of gas.

British Thermal Unit (BTU) – The amount of heat required to raise the temperature of one pound of water one degree Fahrenheit under standard conditions of pressure and temperature.

BTU/Btu Factor – A number which is multiplied by the volume of gas measured in Mcf in order to arrive at the heating value of gas which is measured in millions of British Thermal Units (MMBTU/MMBtu).

Christmas Tree, Wellhead – The system of pipes, valves, gauges and related equipment located on the well at ground level which controls the flow of gas and other petroleum products produced from the well.

Completion – This is the process which takes place immediately after the drilling operation is complete. This involves the setting of casing, tubing, packers, possibly down hole pumps, possibly hydraulic fracturing, possibly installing sand screens, etc.

Compression – Often natural gas from the wellhead must be compressed in order to increase its pressure enough to get it into pipelines for further transportation to market.

Decline Curve – The graphic representation that shows how hydrocarbon production rate changes over time.

Depletion – With respect to oil and gas production, the process by which a producing reservoir is depleted (or produced) of its hydrocarbon.

Drilling Mud, Drilling Fluid – Any of a number of liquid and gaseous fluids and mixtures of fluids and solids used in operations to drill boreholes into the earth.

Drilling Rig – The equipment used to bore into the earth. Rotary style drilling is primarily used in today's drilling.

Dth – Decatherm; measurement unit for heat equal to 1 million Btu.

Farm-in – An arrangement whereby an Operator buys in or acquires an interest in a lease owned by another Operator on which oil or gas has been discovered or is being produced. Often farm-ins are negotiated to help the original owner with development costs and to secure for the buyer a source of crude oil or natural gas.

Farmout – Assignment or partial assignment of an oil and gas lease from one lessee to another lessee.

Force Pooled – The act of being forced by state law into participation in an oil and/or gas producing unit.

Fracture, Fracing (Fracking), Hydraulic Fracturing, Frac Job – The process of using high pressure to pump sand-laden gelled fluid into subsurface rock formations in order to improve natural gas flow into a well bore.

Fresh Water – With respect to oil and gas production, fresh water, which is found at shallower depths, is differentiated from salt water or brine, which is usually found along with hydrocarbons.

Horizontal Drilling – A well of which a portion is drilled horizontally to expose more of the formation surface area to the well bore.

Intangible Drilling Costs (IDC) – All costs incurred in drilling a well other than equipment or leasehold. These expenses are 100 percent tax deductible even if the well is productive.

Landman – An individual employed by an oil or gas company to oversee landowner relations. A landman's duties would include, but not be limited to: securing of leases, lease amendments, pooling and unitization agreements and title defects.

Lease – The generic name for an Oil, Gas and Mineral Lease (OGML).

Lessee – The purchaser (taker) of an Oil, Gas and Mineral Lease.

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Lessor – The party who grants an Oil, Gas and Mineral Lease.

Mcf – One thousand cubic feet of natural gas measured at standard pressure and temperature conditions.

Mineral Owner – Owner of the rights and interests in a mineral estate (where interests in a landed estate have been severed), along with the right to execute a lease on the same.

MMBTU/MMBtu – One million British thermal units; a measurement of heating value.

MMcf – One million cubic feet; a measurement of gas volume only.

Net Revenue Interest (NRI) – An owner's interest in the revenues of a well.

Non-Participating Royalty – A royalty interest which participates in any oil or gas found, but does not participate in lease bonuses or rentals.

Overriding Royalty (ORRI) – A royalty in excess of the royalty provided in the oil lease usually added on during an intervening assignment.

Pay Zone – The rock in which oil and gas are found and targeted by the producer for fracturing.

Play – A set of known or postulated oil and/or gas accumulations sharing similar geologic, geographic or temporal properties. Also, the activities associated with oil and/or gas development in an area.

Pooled Unit – Unit created by combining separate mineral interests under the pooling clause of a lease or agreement.

Royalty – Revenue generally received by a mineral owner from the production of oil or gas, free of costs (except taxes).

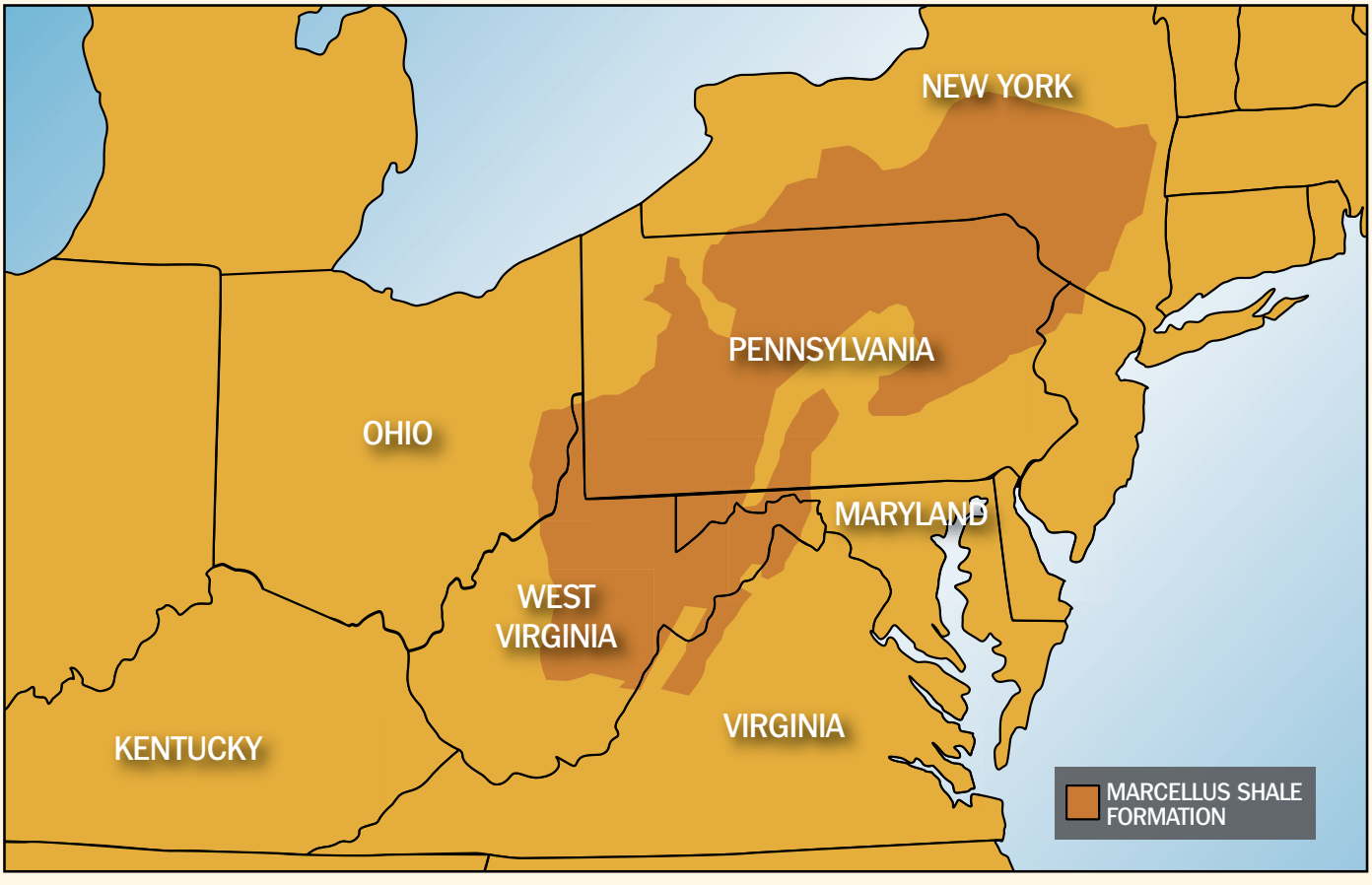
Tcf – One trillion cubic feet; a measurement of gas volume only.

Unitization, Unitization Agreement, Unit Agreement – Joint operations to maximize recovery among separate operators within a common reservoir.

Working Interest (WI) - Interest(s) in a mineral property.

The Marcellus Shale Formation

The Marcellus Shale is the largest play in the United States and extends through much of the Appalachian Basin, including New York, Pennsylvania, Ohio and West Virginia. It contains one of the world's largest untapped natural gas reserves, estimated at approximately 500 trillion cubic feet.



Oil & Gas 101: The Marcellus Shale

Marc A. Monteleone, Partner
Bowles Rice McDavid Graff & Love LLP

Marc A. Monteleone is a partner in the Charleston office of Bowles Rice and serves as the firm's Chief Financial Officer. He concentrates his practice in oil and gas law, commercial law, federal and state taxation, construction law and real estate development.

Mr. Monteleone has extensive experience in managing oil and gas operations. He currently serves as the chief financial officer of Waco Oil & Gas Co., Inc., where his responsibilities related to Marcellus Shale exploration include strategic planning, supervising the acquisition and leasing of mineral interests and pipeline rights of way, negotiating gas sales contracts and permitting Marcellus wells. In 2010, he was elected to the board of directors of the West Virginia Independent Oil and Gas Association and is a member of the Association's Commerce Committee. He also serves on a task force negotiating with pipeline transmission companies on behalf of the producers. He is the owner of Mountain Lion Enterprises Inc. and Tygart River Oil & Gas, LLC

Mr. Monteleone received his bachelor of science degree in business administration, *summa cum laude*, with an emphasis in accounting, from West Virginia University. He earned his law degree from West Virginia University, and his masters of law in taxation from New York University.

If you live in West Virginia and have not heard about the Marcellus Shale by now, you must be living under a rock. Over the last two years, the Marcellus Shale has become the top energy story in the northeastern United States. The Marcellus Shale, named after an outcropping near Marcellus, New York, is located throughout New York, Pennsylvania, Ohio and West Virginia. It has been classified as the second largest discovery of natural gas in the world, with scientists estimating the Marcellus Shale contains as much as 500 trillion cubic feet of natural gas.

The Marcellus Shale is the deepest formation of the Devonian Shale, which is in the Hamilton Group. It is typically found just above the Onondaga formation, and was formed from a fine mud deposited on the Onondaga limestone millions of years ago during the Devonian Period. Radiometric dating puts the Marcellus Shale at 380 million years old. In north central West Virginia, the Marcellus Shale has been located at depths between 6,500 and 7,500 feet.

The thickness of the Marcellus Shale ranges from 150 to 300 feet, with rich organic material located at the deepest depths, and accounting for approximately 50 to 100 feet. While permits have been issued for Marcellus wells throughout West Virginia, the primary drilling efforts have been in the following north central counties: Marshall, Wetzel, Preston, Barbour, Upshur, Harrison, Doddridge and Marion. As more counties are explored, the thickness and depth of the Marcellus Shale will undoubtedly vary.

Shale plays have traditionally not been developed because they failed to produce natural gas in volumes sufficient to make the wells economically viable. This was primarily because of the low permeability found in most shale. Because of the low permeability, shale – including the Marcellus Shale – have been classified as an unconventional natural gas reserve. However, recent improvements in drilling and hydraulic fracturing (fracing) techniques have allowed producers to begin developing natural gas from unconventional reserves. As a result of the improved techniques and recent shale discoveries, scientists now predict that over half of our nation's natural gas supply will be produced from unconventional reserves by 2018.

Why now? What has led to the Marcellus frenzy? After all, natural gas producers have known about the Marcellus Shale for a long time. Marcellus wells, some of which are 50 years old, have produced at very low volumes, causing a long capital recovery period. As stated above, the recent improvements in hydraulic fracturing and directional drilling have led to the explosion in exploration and production of the Marcellus Shale.

Hydraulic fracturing is the process used to free the natural gas trapped in the shale. During the hydraulic fracturing process, fluids (primarily

The Rithner Marcellus Well located in Harrison County, West Virginia

water) are injected into the Marcellus Shale at pressures exceeding the parting pressure of the shale. Once the fluids break up (fracture) the shale, sand is pumped into the voids to keep the fractures open. This process facilitates the flow of natural gas out of the formation and improves the production from the wells.

Directional drilling is the second key aspect of new techniques that have allowed producers to free the natural gas trapped in the shale. Directional drilling is a process where the well is drilled vertically, to a depth just above the target formation, and then the well is turned and drilled horizontally in the target formation for some distance. This process exposes a much larger portion of the target formation to the producer, which allows the producer to stimulate, through fracing, a much larger portion of the target formation and increase the production of the well.

As you might imagine, these improvements in technology do not come cheap. The cost of horizontal drilling and large hydraulic fracturing have dramatically increased the cost of drilling wells in West Virginia. A conventional shallow well, drilled and completed to a depth of 5,000 feet in West Virginia today, would cost approximately $300,000. A typical **vertical** Marcellus well, drilled and completed to a depth of 6,500 to 7,500 feet, will cost considerably more. The frac job for a typical vertical Marcellus well uses approximately 20,000 barrels of water and 600,000 pounds of sand. Depending upon the cost expended to obtain the water, **a typical vertical Marcellus well will cost between $800,000 and $1.5 million.** Vertical wells traditionally return a large portion of the frac water and have steep decline curves, making their economic viability questionable as natural gas prices decline.

A typical **horizontal** Marcellus well is drilled vertically to a depth of approximately 5,800 feet and then turned and drilled directionally for another 3,000 to 4,000 feet, making the total length of the well almost 10,000 feet. Some companies are experimenting with longer lateral legs and, as a result, some wells have been reported with 6,000-foot lateral legs. A horizontal well with a 3,000-foot horizontal leg will have approximately 8 to 10 frac stages. Each stage will use 8,000 to 10,000 barrels of water and 700,000 pounds of sand. Again, depending upon the cost expended to obtain the water, **a typical horizontal Marcellus well will cost between $3.5 million and $5 million.** Horizontal wells have traditionally returned approximately 10 percent of their frac water and have had a slower decline curve, making the horizontal Marcellus well more economically viable.

The economic impact from the development of our unconventional natural gas resources is estimated to be in the hundreds of billions of dollars. Recent shale plays, such as the Haynesville, Barnett, Fayetteville, Woodford and Marcellus have had a huge economic impact on the regional economies where each is located. The Haynesville is credited with adding $10.6 billion to Louisiana's gross sales in 2009. The Barnett Shale is credited with generating 111,000 new jobs in Texas. The Fayetteville has created $18 billion of new development activities in Arkansas. In 2009, the Marcellus Shale development added 7,600 jobs, paid $298 million in wages and increased gross revenue by $1.2 billion for West Virginia. Experts predict that by 2015, the Marcellus Shale development will create over 19,000 new jobs, pay over $800 million in new wages and generate hundreds of millions of dollars in tax revenue for West Virginia.

This is why the Marcellus Shale has created such an industry and media frenzy. Development of the Marcellus Shale will create huge economic growth, provide a safe clean energy source, and help our nation achieve energy independence. Our legislative leadership needs to work with the natural gas industry to develop rules and regulations that will allow the industry to continue exploration of West Virginia's Marcellus Shale in a safe and efficient manner. The industry's development of the Marcellus Shale will help keep West Virginia's economy strong for generations to come!

Understanding The Marcellus

Duncan C. "Scotty" Malcolm, President
D.C. Malcolm, Inc.

Duncan Malcolm is the president of D.C. Malcolm, Inc., an independent oil and gas production company located in Charleston, West Virginia, which he founded in 1968. He also is the chairman of the board and president of Consumers Gas Utility Company, with offices in Charleston, Huntington, Pennsboro and Spencer, West Virginia.

Mr. Malcolm earned a bachelor's degree in geology from Lehigh University and served as an academic instructor for the U.S. Air Force. From 1954 to 1968, his work as a geologist for Sinclair Oil & Gas Company, United Carbon Company (Ashland Oil & Refining) and Cabot Corporation led to positions of increasing responsibility, including regional management and supervision of oil and gas exploration in the Eastern United States.

Mr. Malcolm is a member of the American Institute of Professional Geologists and the American Association of Petroleum Geologists, and a past president of both the Appalachian Geological Society and the West Virginia Small Public Utilities Association. He served as chairman of the West Virginia Oil and Gas Conservation Commission from 1974 to 1980 and was named West Virginia Oil & Gas Man of the Year in 1998.

The drilling for gas in the Marcellus Shale formation has ignited a firestorm of controversy. This controversy has resulted in rules and regulations, both issued and proposed, that will have a very wide-ranging impact on the oil and gas industry. People not directly involved are, rightly so, confused. What's happening here? And, how is this likely to play out in the future?

First of all, any discussion of Marcellus Shale drilling should be separated into three areas, contingent on the type of drilling and completion operation planned. The three are: (1) vertical drilling using standard, shallow-well drilling and completion technology; (2) drilling vertical wells using large, water-intensive completion techniques; and (3) horizontal drilling using multiple fracturing (frac) stages and very large volumes of water.

Each of these drilling and completion techniques presents a unique set of circumstances. Unfortunately, all wells permitted as "Marcellus" are looked upon by the media, regulators, and the public as presenting the same type of operational problems. Actually, nothing could be further from the truth.

Let's try to clear up the confusion by describing each in general terms, beginning with the standard, tried and true, Devonian Shale well. In this operation, wells are generally drilled through the Devonian Shale section, the lowest member being the Marcellus. This well is drilled vertically from the surface to total depth (T.D.) and is usually less than 6,000 feet deep. This allows it to be drilled under a shallow-well permit, with no special drilling requirements.

The most common completion is a two- or three-stage frac job, treating several formations. The Marcellus is generally treated, not with water, but with nitrogen. Subsequent formation stages generally use a foam mixture of 75 to 90 percent nitrogen and 10 percent water (5,000 to 10,000 gallons). The water is flowed back into a plastic-lined pit. About 20 percent of the original volume of water flows back to the surface and is treated to remove salt and other impurities and spread on the location. The pit is filled and the location, covering an area of about 100' x 200', is graded and seeded with grass under requirements of the West Virginia Department of Environmental Protection (DEP).

This type of well, under normal conditions, has little impact on the environment because the amount of water used is minimal. Also, in view of the relatively small frac jobs, there is only a very small increase in traffic on the local roads. Most wells of this type are drilled in southwest West Virginia and take about one week to drill and one day to frac.

The second type of Marcellus well – drilled vertically and completed using large volumes of water – may or may not be drilled under a shallow-well permit. If it is deeper than 6,000 feet, a deep-well permit is necessary. The permit requires, among other things, the owner of the surface land on which the location is built to approve the location. The drilling operation itself is the same as that of the well described above. The surface area used is usually larger, covering two to three acres. The frac job here may use over one million gallons of water and 500,000 pounds of sand. Just getting that amount of water to the location by truck would necessitate hauling some 300 or more truckloads, and the sand, another 25 trucks. This puts a serious strain on rural roads. In addition, a 20 percent recovery would require treating, hauling or pipelining to treatment plants of more than 200,000 gallons of water. The drilling operations take about one week, and the frac, three days.

The third type of Marcellus well involves a horizontal drilling operation, beginning with

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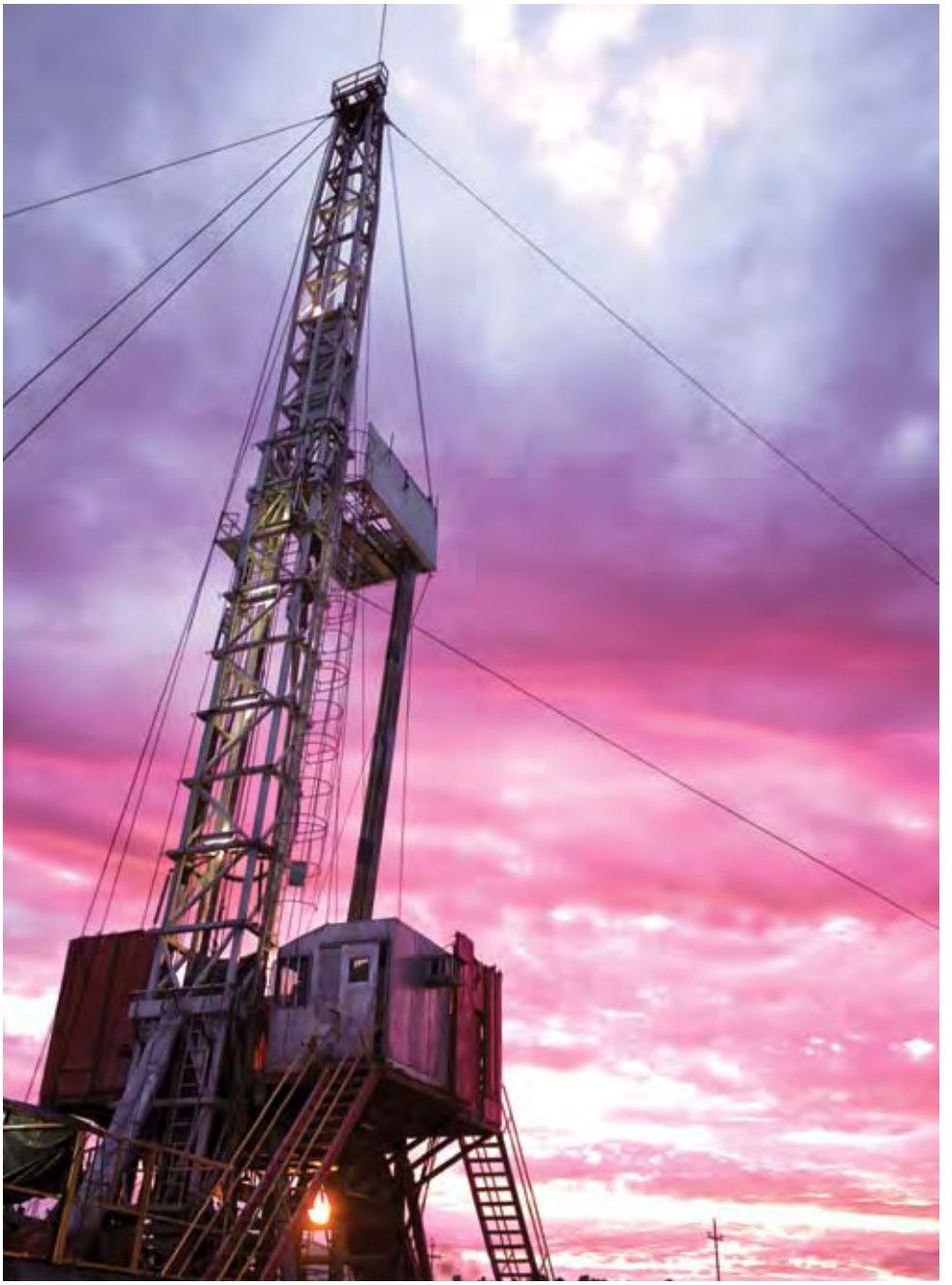

vertical drilling to 500 to 1000 feet above the Marcellus. The hole is then "kicked off" and drilled at an angle until it encounters the Marcellus. They then drill along in the bedding plane of the Marcellus formation, horizontally, and may reach out 4,000 to 5,000 feet from the vertical hole. This exposes 4,000 to 5,000 feet of the pay zone, rather than the 150 to 250 feet in the vertical wells.

Instead of treating one Marcellus zone, the operator generally treats several sets of perforations in the Marcellus. They may use 10 or more stages to cover the entire zone. If each stage used one million gallons of water and 500,000 pounds of sand, 1) where do you get that volume of water; 2) how do you get it to the location (truck, pipeline); 3) how do you clean it up or dispose of it, and 4) how big a location is required to accommodate all the equipment needed to frac the well? The drilling and completion operations can take as much as several months.

Basically, we have one set of technologies having little, or no, environmental impact and two that pose some problems. Unfortunately, all three are mentioned in the same breath by the media, regulators and the public in general. The initial reaction of the DEP, the EPA and the Department of Highways (DOH) – at the urging of the environmental activist community – was to draft one set of new regulations covering all "Marcellus wells." Fortunately, the leadership of DEP and the DOH in West Virginia seem to recognize that different conditions prevail.

Certainly, the water required for these big frac jobs deserves a great deal of attention. What effect will the removal of these large volumes have on local water sources? Will the required water be delivered to the location by truck? By pipeline? What happens to the flowback water? How will it be treated and where? Are there really dangerous contaminants (carcinogens, dangerous radioactivity) in it? For the record, we feel this risk is very minimal. It should be noted that technology exists to treat the flowback water to remove contaminants (salt, sand, chemicals, etc.) so that it can be re-used in subsequent frac jobs. This is now the standard procedure.

Another factor to be considered is the effect of these operations on the surface where the well is drilled. The large frac jobs require a multitude of heavy trucks and equipment, as well as large locations (three to five acres). These trucks can overload the local roads with traffic, running 24 hours a day, seven days a week. On the plus side, several wells can be drilled from each location.

As you can see, not all Marcellus wells are the same. Unfortunately, many people are advocating laws, regulations and rules that do not differentiate among them.

The Marcellus shale is potentially the largest natural gas reservoir ever discovered in the Appalachian Basin. If it is responsibly developed, it can benefit all the citizens of this area. Let's make sure that all pertinent factors are considered before we legislate and regulate Marcellus gas out of business. V

Responsible Marcellus Extraction Will Benefit All of West Virginia

Randy C. Huffman, Cabinet Secretary
West Virginia Department of Environmental Protection

Appointed as Cabinet Secretary for the Department of Environmental Protection in 2008, Randy C. Huffman brings more than 22 years of experience with the DEP to the top regulatory post. Prior to his appointment, Mr. Huffman concurrently served three years as Deputy Cabinet Secretary and Director of Mining and Reclamation.

A native of Charleston, he graduated from West Virginia Institute of Technology with a bachelor of science degree in mining engineering technology and later earned his master's degree in business administration from West Virginia Graduate College.

One of the most talked about issues before the West Virginia Legislature this year was the Marcellus Shale. Interestingly, it was not the shale itself that was of such great interest, but the process used to extract the natural gas from it, and the effects of that process on the surface.

The Marcellus Shale is a rock formation that lies deep beneath the surface of much of the state. Although the formation has been there for millions of years, it has come into focus in the last four or five years because of the high-yield drilling techniques being used to recover the gas. Companies are combining horizontal drilling and hydraulic fracturing practices to maximize their recovery operations. Hydraulic fracturing involves pumping millions of gallons of water under high pressure into the shale formation to produce fractures, or cracks in the rock. The cracks allow the gas to flow out of the shale and into the well more efficiently.

We at DEP are keenly aware of how important this industry is to the state's economy... Natural gas is a resource that, if extracted responsibly, can benefit all of West Virginia.

In just the past two years in West Virginia, the number of conventional well applications decreased, while the number of permits to drill into the Marcellus Shale increased. The state's permitting process and regulatory program did not have regulations that directly addressed the larger land disturbance, increased water usage and other issues associated with drilling operations targeting the Marcellus Shale.

One of the key issues with the DEP drafted legislation, addresses water management of West Virginia streams and natural water sources

So, the West Virginia Department of Environmental Protection underwent a comprehensive review of its Office of Oil and Gas and its regulatory authority. As a result of that review, and with the help of a number of stakeholders, the DEP drafted legislation that attempted to strengthen the agency's authority to regulate the industry.

One of the key issues the bill addressed was water management. As more and more Marcellus wells began appearing on the state's landscape, people began expressing concerns about the amount of water being used in the hydraulic fracturing process, where that water was coming from, and how it was being disposed of once it comes back up from the well.

To make sure we do not dry up our streams, the bill addressed coordinating water withdrawals among the drilling companies to ensure not too many companies are using water from the same stream. In addition, the bill required companies to keep records of quantities and disposal methods for water that flows back out of the well after the fracturing process.

Other requirements of the bill included a requirement that sites be designed by a professional engineer – this was not required before because conventional, vertical wells do not disturb nearly as much land – and an increase in permit fees for Marcellus wells, from an average of $650 to $10,000, essentially to pay for the increased resources needed to properly regulate the industry.

The number of permits issued by the Office of Oil and Gas dropped from 2009 to 2010 because horizontal drilling became the predominant method for extracting natural gas. The drop in permits has resulted in a $1.25 million deficit in the DEP's Oil and Gas budget.

While the number of permits dropped, the amount of work required of DEP increased. The size of the Marcellus operations and the length of time spent completing the well requires more of an inspector's time. In addition, the number of concerns communicated to the agency by the state's citizens has resulted in more of the inspectors' time being spent following up on their concerns. More of these wells translates into the need for more resources.

Lastly, the bill had language that would have required forced pooling of mineral owners. Simply stated, when three of four mineral owners agree to royalties with a drilling company, the fourth owner could be forced to join in as well. Like the other owners, he or she would be compensated by the drilling company, but would have to agree to allow the company access to his or her minerals. From an environmental perspective, this process provides for a more efficient extraction of the natural gas and less surface impacts because fewer wells would need to be drilled to access the resource.

During the 2011 West Virginia legislative session, the Senate and House of Delegates considered two different bills to regulate the oil and gas industry, and the Senate passed its version. The Senate amended DEP's bill considerably, and language related to forced pooling was amended out of both bills because it was the most contentious issue among legislators and interested parties. The House drafted a bill of its own and never really gave much consideration to DEP's version.

By the end of the session, a much amended version of the DEP bill passed the Senate; however, the House replaced the Senate bill with its own version and the bill became too contentious in the waning hours of the session for any agreement to be reached. As a result, no new legislation was passed and current law continues.

Now, the chief of the Office of Oil and Gas and I have a challenge before us to ensure that the industry is properly regulated and the state's environment and its citizens are protected, using fewer resources than we had before. We believe that we can do that for the short-term. We are looking at how current laws that are designed for conventional drilling can be applied to horizontal drilling, and we are looking at the potential need for emergency rules. We at the DEP are keenly aware of how important this industry is to the state's economy, which is why we invested so much time in drafting our bill. Natural gas is a resource that, if extracted responsibly, can benefit all of West Virginia.

The DEP's mission and commitment to the people of West Virginia is "Promoting a healthy environment" and maintaining the integrity of our beautiful state

Adding Balance and Value to CONSOL's Energy Portfolio

Nicholas J. DeIuliis, President
CONSOL Energy, Inc.

Nicholas J. Deluliis, president of CONSOL Energy Inc., is responsible for all operations at CONSOL Energy and all of its business divisions, including CNX Operations, CNX Gas, CNX Land and CNX River.

Mr. Deluliis received a degree in chemical engineering from Penn State. He also received a master's degree in business administration and a juris doctorate degree from Duquesne University.

Mr. Deluliis served as the president and CEO of CNX Gas from 2005 until 2009 and as the chief operating officer of CONSOL Energy from 2009 until early 2011.

He is vice chair of the board of directors of the World Coal Institute, director at-large of the board of directors of the Independent Petroleum Association of America, a director of the U.S. Chamber of Commerce and a director of the Bituminous Coal Operators' Association, Inc. He serves as a trustee of Carnegie Museums of Pittsburgh and the vice chairman of Carnegie Science Center and is a director of several other regional organizations.

He received the 2007 Ernst & Young Entrepreneur of the Year® Award and in 2009 was named Outstanding Engineering Alumnus by Penn State University. He also received the Distinguished Alumni Achievement Award from Duquesne University's Palumbo/Donahue School of Business.

CONSOL ENERGY
AMERICA'S ENERGY STARTS HERE.

There has never been a better time to be in the energy industry. At the same time, this is perhaps the most challenging time the industry has ever faced. As a producer of energy since the Civil War, CONSOL Energy has navigated its way successfully through multiple regulatory, legislative and social environments. The United States is currently in need of a sound energy policy, and threats to fossil fuels from regulators and special interests are many, but CONSOL Energy is better positioned than ever to face these challenges.

CONSOL is West Virginia's largest coal operator, producing over 34 million tons of coal annually and employing over 4,000 people in the state. It was not until relatively recently that CONSOL also became known as a leading natural gas producer. Born of the need to degasify its coal seams in southwestern Virginia, CONSOL began production from its coalbed methane assets in the early 1990s, which resulted in the formation of CNX Gas Corporation, a wholly owned subsidiary of CONSOL Energy. These operational gas assets stretch west to Indiana, south to Tennessee, north to New York and, in some areas not only overlay our coal footprint, but also overlay the formation known as the Marcellus Shale.

In October 2008, CONSOL drilled its first well in the Marcellus Shale on what was at that time a portion of our 250,000 Marcellus Shale acres. Like any strong company, we look to grow our business. When considering an opportunity, we evaluate it against what we have identified as CONSOL's unique operational strengths: underground longwall coal mining and unconventional gas assets. Our acquisition of Dominion's Exploration and Production business embodied this philosophy. The Dominion acreage was a perfect complement to our unconventional gas assets. The acreage was strategically located; supported by existing infrastructure; and held by production (which means we did not have to drill to hold the leases). For these reasons and others, we consummated the deal. In addition to bolstering our gas platform, the acquisition also resulted in a more balanced energy portfolio, improving CONSOL's risk profile and positioning it to deliver sustainable long-term growth and increased value to shareholders. Not only did our operational footprint grow significantly with this transaction, but more importantly, it grew

deeper as we substantially increased our opportunities to extract incremental value through stacked pay zones of assets: coal, coalbed methane, conventional natural gas and shale gas. Today, we have over 750,000 Marcellus Shale acres and are now the third largest Marcellus acreage holder in the basin.

The Marcellus Shale in West Virginia is found throughout most of the state, and over 400 permits for shale development were issued in the state in 2010. According to a 2010 American Petroleum Institute study, the Marcellus Shale industry in West Virginia led to the creation of 13,249 jobs in the state during 2009. The process requires a full range of professions and skilled trades, including engineering, surveying, safety, environmental, equipment maintenance, land acquisition, legal, and many more. It has been said that each well requires 415 workers from 150 different kinds of companies to release and harness the fuel.

The economic ripple effect begins prior to, and reaches far beyond, the drilling rig. The development of a Marcellus Shale well involves exploration, drilling, completion, pipeline construction and processing, among others. These activities require goods and services from many sectors of the economy, including construction, transportation, iron and steel, land and engineering services. The economy is further stimulated through business-to-business spending and royalty payments to landowners who, in turn, pay taxes and spend income on goods and services.

It is incumbent on our industry to get this historic opportunity right; to operate safely, to encourage transparency in communication and to continue to educate the public on industry fundamentals. The public sector has an obligation as well. To continue to realize the benefits associated with the development of this great resource, it is essential for our elected officials and regulators to cultivate an environment of certainty that supports businesses' continued investment in coal and gas operations.

The Marcellus Shale adds to an already formidable domestic energy portfolio, with coal as the bedrock. Nationally, coal and natural gas account for about 70 percent of all electric power generation, which places CONSOL Energy in a very enviable position in the marketplace for power generation fuels. But let's not stop here in the States. There are global implications when discussing energy produced and transported out of this region. Within the next 20 years, it is anticipated that energy demand will grow by 10 percent nationally, and 50 percent internationally. To meet this demand, the world will depend on fossil fuels.

So what does all of this mean for CONSOL Energy? It means great opportunity. It means the potential to dramatically improve, and perhaps forever change, the economic environment of West Virginia and the eastern United States. V

The Natural Gas Industry's Role in West Virginia's Economic Development

Dr. Tom S. Witt, Director
Bureau of Business and Economic Research
West Virginia University College of Business and Economics

Dr. Tom S. Witt is the director of the Bureau of Business and Economic Research in the West Virginia University College of Business and Economics. He also serves as a professor of economics at WVU and associate dean for research and outreach in the College of Business and Economics. He received his BA from Oklahoma State University and his MA and Ph.D. degrees from Washington University (St. Louis).

Dr. Witt's research spans the areas of regional economics, public finance and policy, economic development and energy economics. He has co-authored and edited two books and has numerous publications in academic journals and research monographs.

He has served as principal investigator on nearly $7 million in sponsored research from state and national organizations and businesses. He was appointed by Governor Manchin to the Unemployment Compensation Solutions Taskforce in September 2008 and served on his Tax Modernization Project.

Dr. Witt was selected for "Who's Who in West Virginia 2000" by *The State Journal*. He is a member of many professional associations including the American Economics Association and the National Association for Business Economics, and a past president of the Association for University Business and Economic Research.

Natural gas has historically played a role in West Virginia's economic growth and has the potential to be a major driver of progress in future years. Comprising part of our state's diverse energy resource portfolio, the natural gas industry has been a key element in the development of the chemical and glass industries in the past, as well as serving as a major source for home and commercial heating. From the time gas was discovered in 1841 by William Tompkins, the development of this industry led to the creation of many towns near drilling operations, which used natural gas for home and street lighting. From 1906 to 1917, West Virginia was the leader in natural gas exploration and development in the United States.

Our recently released report, *The Economic Impact of the Natural Gas Industry and Marcellus Shale Development in West Virginia in 2009*[2] (see chart below), illustrates the recent growth of the industry through 2009 and documents its contribution to the state economy. In 2009, for example, 24,400 jobs were associated with the oil and natural gas industry. This impact, however, excludes payments to landowners for leases and royalty payments, as well as the downstream linkages into storage, production of byproducts and the use of the taxes and fees by state and local governmental units.

The greatest growth potential for the industry lies in the leasing and drilling of the Marcellus Shale deposits in the state. Permitting of Marcellus Shale wells started in 2002 and has grown exponentially since. While the development of these shale resources is still in its early stages, we estimate that there was a considerable economic contribution from the Marcellus Shale in 2009 (see chart on opposite page).

The economic impacts of the Marcellus Shale development spanned all the major sectors of the state's economy and represent the first stages of the growth prospects associated with the industry. Based upon three scenarios

Economic Impact of the Oil and Natural Gas Industry in West Virginia 2009

	Direct	Indirect & Induced	Total
Business Volume (millions 2009$)	$4,512.5	$7,491.2	$12,003.7
Employee Compensation (millions 2009$)	$584.1	$499.3	$1,083.4
Employment (jobs)	9,900	14,500	24,400
Total Value Added (millions 2009$)	$1.969.1	$1,153.7	$3,122.8
Severance Taxes (millions 2009$)			$65.9
Assorted Other State Taxes[1] (millions 2009$)			$44.5

[1]Assorted Other State Taxes include personal, corporate net income, business franchise and sales and use taxes.
Note: Rows may not equal due to rounding

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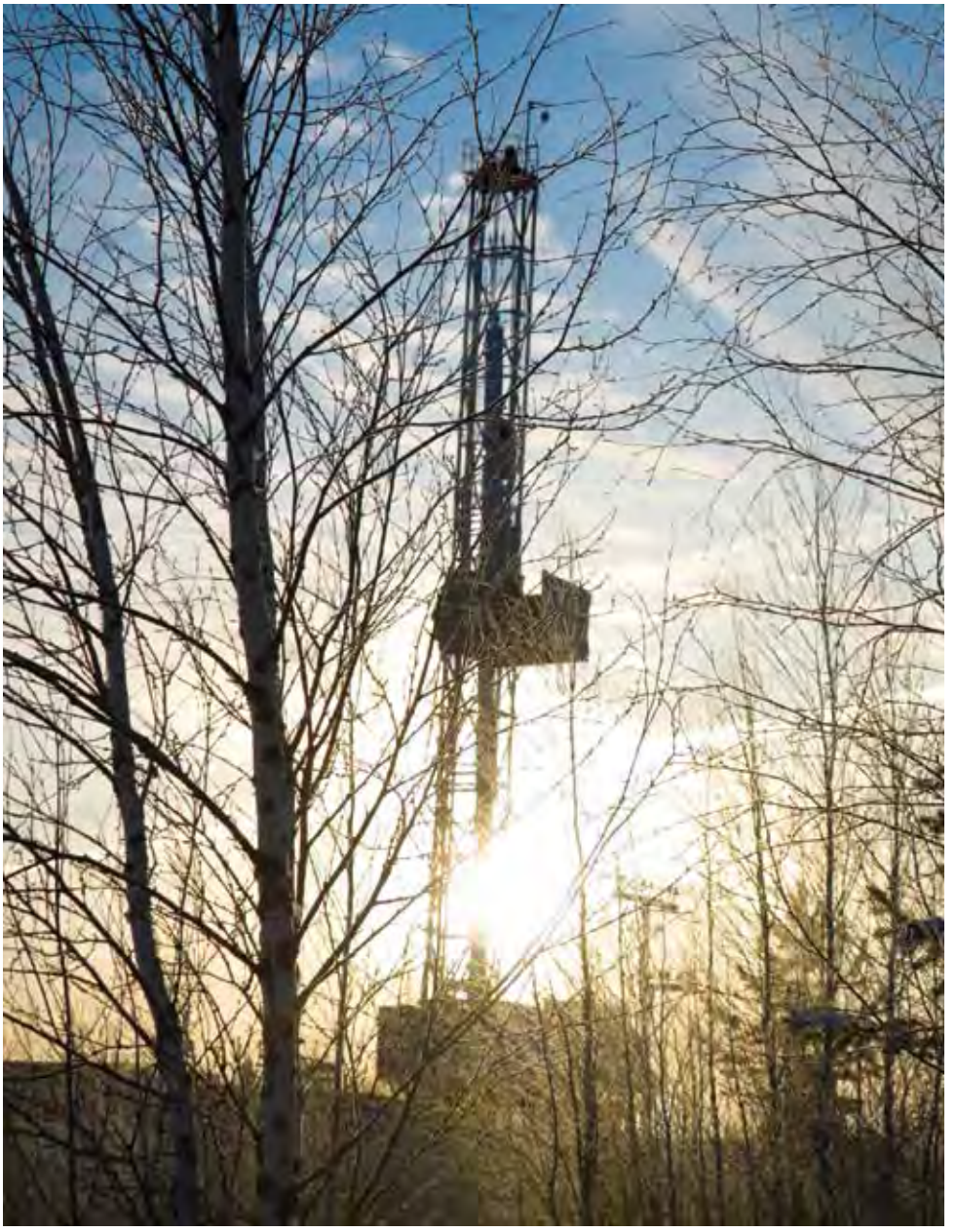
Economic Impact of Marcellus Shale Development in West Virginia 2009

	Direct	Indirect & Induced	Total
Business Volume (millions 2009$)	$1,500.0	$850.0	$2,350.0
Employee Compensation (millions 2009$)	$145.2	$152.7	$297.9
Employment (jobs)	3,600	4,000	7,600
Total Value Added (millions 2009$)	$839.0	$317.7	$1,156.7
Assorted Other State Taxes[1] (millions 2009$)			$14.5

[1]Assorted Other State Taxes include personal, corporate net income, business franchise and sales and use taxes.
Note: Rows may not equal due to rounding



regarding the future growth in drilling activity (no growth from 2009, as well as five and 20 percent annual growth), our research indicates the Marcellus development has the potential to add upwards of almost 20,000 additional jobs by 2015. Associated with the job growth will be increased severance taxes, as well as other state and local tax revenues, permitting the state and communities to "cash in" on the economic growth opportunities created through Marcellus Shale development. As indicated earlier, however, this is a conservative estimate, since it does not include other segments of the natural gas economy, which we hope to address in our future research on the industry.

The long-term growth prospects will depend on the institution of a predictable regulatory and tax structure in West Virginia, conducive to the attracting of capital. One of the greatest growth potentials downstream lies in the potential for additional natural gas processing plants, ethane crackers and other downstream users of the natural gas liquids. The end result may well be the rebirth of West Virginia's manufacturing sector.

Footnotes:
[1]The natural gas industry is defined in this article by the North American Industrial Classification System (NAICS) codes: 211: Oil and Gas Extraction; 213111: Drilling Oil and Gas Wells; 213112: Support Activities for Oil and Gas Operations: 221210: Natural Gas Distribution; 237120: Oil and Gas Pipeline and Related Structures Construction: 333132: Oil and Gas Field Machinery and Equipment Manufacturing; and 486210: Pipeline Transportation of Natural Gas. While oil is included in the definitions of these sectors, the vast majority of the product extracted and marketed consists of natural gas.
[2]Available at the WVU Bureau of Business and Economic Research website ***www.bber.wvu.edu****.*

West Virginia Moves To Maximize Gas Potential

Maribeth Anderson, Director of Corporate Development
Chesapeake Energy

Maribeth Anderson is the director of corporate development for Chesapeake Energy, where her areas of responsibility include government and media relations. She came to Chesapeake after serving as news director for WSAZ Television.

She serves on the boards of The Society of Yeager Scholars at Marshall University, Leadership West Virginia and TEAM for West Virginia Children.

Ms. Anderson graduated from Marshall University with degrees in economics and journalism. As a Yeager Scholar, she studied at Christ Church College, Oxford University, in the United Kingdom. She currently lives in Huntington, West Virginia.

Marcellus Shale development in the Mountain State is already providing thousands of jobs and pumping billions into West Virginian wallets and state coffers. As it turns out, this economy-boosting rock has a few more tricks up its sleeve.

On April 4, 2011, acting Governor Earl Ray Tomblin signed the Marcellus Development Act (SB 465) into law, offering a comprehensive incentive package that entices natural gas-based manufacturing and transportation industries to set up shop in the state.

The Act serves to amend, define and reinstate certain articles of the West Virginia code as applies to the natural gas industry. Most notably, the Act offers new incentives for ethane cracking facilities and reinstates the previously expired Alternative Fuel Tax Credit – twin industries that can revitalize West Virginia.

The Alternative Fuel Tax Credit incentivizes the utilization of natural gas vehicles (NGVs).

Chesapeake ENERGY

The conversion of a used vehicle to run on alternative fuels, purchase of a new NGV and construction of both commercial and private alternative fueling infrastructure qualify for the credit.

NGVs run on compressed or liquefied natural gas (CNG and LNG, respectively). These alternative fuels produce a cleaner emission than both gasoline and diesel fuel. CNG also has maintained a price point of $1 less than gasoline and diesel per gas gallon equivalent, reducing top-off costs significantly.

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Chesapeake Energy is committed to protecting the environment in all its operating activities

Such credits will not only draw new fueling business to West Virginia, but will make life a lot easier on those existing stations that want to expand, as alternative fueling infrastructure is heavily incentivized. This offers companies the potential to lay groundwork for a fueling infrastructure that costs less, burns cleaner and is securely tucked away beneath American soil.

With these credits in place, natural gas advocates can begin to identify existing infrastructure and commercial fleets that will benefit from the Act. Determining a strategy that offers alternative fuels to existing stations and fleet operations, while attracting new business in the state, will transform the bill from a list of tax incentives and benefits to a fully-realized alternative fuel model.

The Act also serves to incentivize construction of ethane cracking facilities in the state. Ethane, an organic compound that comes up the wellbore with natural gas methane, is sent to facilities where it is "cracked" into ethylene and used to manufacture products ranging from trash bags to rubber tires.

The Upper Ohio Valley is particularly rich in ethane, which is currently shipped to Canada or parts south to existing facilities. Building and operating a cracker in-state would revitalize the petrochemical industry, while providing thousands of additional jobs and paying out billions in state tax dollars.

Between tax benefits that make it worthwhile to build in-state ethane crackers and tax credits that encourage NGV infrastructure and development, West Virginia's Marcellus Development Act is a powerful step towards maximizing the earning potential of shale gas and revolutionizing our transportation industry.

Marcellus and Water

George A. Patterson, III, Partner
Bowles Rice McDavid Graff & Love LLP

George A. Patterson, III is a partner in the Charleston office of Bowles Rice and a member of the Coal, Oil & Gas Practice Group. He has focused his practice to matters involving oil and gas, coal and commercial real estate law.

Mr. Patterson is a trustee of the Energy and Mineral Law Foundation and served as chairman of its Oil and Gas Committee (1996 - 1997). He is recognized by *Best Lawyers in America*® in the area of oil and gas law and named a West Virginia *Super Lawyer*® in the Business/Corporate practice area.

He is frequently invited to write and speak for various legal and industry publications and meetings on topics dealing with rights and interests of oil and gas lessees, surface owners, royalty litigation, mineral ownership, oil and gas loans for the banking industry and coal, oil and gas operations.

Mr. Patterson graduated, *magna cum laude*, from West Virginia University in 1976, and received his law degree in 1979 from West Virginia University College of Law.

In the 1840s, William Rathbone found oil and gas bubbling out of Burning Springs in West Virginia, collected the oil by skimming it from the water, and sold it as medicine. In the 1860s, oil wells were drilled in the area, resulting in an oil discovery many recall as one of the largest in the world. Much has changed since then, but another opportunity has arrived. Today, at much deeper depths, the dense Marcellus Shale rock has amazing economic and energy supply impact because of two recent developments: 1) use of more sand and substantial volumes of water, up to three million gallons per completion, as part of the fracturing process; and 2) advanced drilling technology that permits drilling horizontally in the Marcellus formation. This article discusses the first development, Marcellus water use, from a practical and legal point of view.

West Virginia has not had many serious court disputes between private parties regarding water use, because West Virginia is blessed with clean water.

The first phase of water use is withdrawing or accumulating water; the second is injection; and the third is flow back and disposal of water produced after the well is completed. Through this short discussion, it may help to remember that West Virginia law requires permits from the West Virginia Department of Environmental Protection (WVDEP) before drilling or fracturing any well. The WVDEP may not issue a permit if it finds that the well design fails to protect fresh water sources and supplies.

West Virginia has not had many serious court disputes between private parties regarding water use, because West Virginia is blessed with clean water. Water is abundant, and water withdrawal for the Marcellus has not created any serious problems. While the golden algae bloom on Dunkard Creek raised public awareness of the effect of low stream water levels, the experts determined the bloom was not caused by oil and gas. Nevertheless, in advance of any real water withdrawal issues, the WVDEP is taking action. As part of the permitting process, producers must report the location from which water will be obtained and the anticipated volume for use. WVDEP also developed a Water Use Guidance Tool, available at **http://www.dep.wv.gov/WWE/wateruse/Pages/WaterWithdrawal.aspx** to verify when it is environmentally safe to withdraw water from streams.

To accumulate or store water, producers construct impoundments. Comparable in size to nice farm ponds, impoundments are generally too small to be regulated under West Virginia's Dam Control Act. WVDEP developed new regulations two years ago to ensure impoundments are properly constructed and maintained.

In some instances, water is piped to a well location; in other instances it arrives by truck. West Virginia receives substantial tax revenue from the oil and gas industry (in 2009, $85.5 million in severance tax, plus approximately $97.2 million in property tax); nevertheless on February 1, 2011, the West Virginia Department of Highways instituted a policy requiring producers to post road repair bonds to use our public roads.

The second water use phase, injection, occurs as part of the fracturing process. Fracturing is not new – it has been in use since 1949. Marcellus fracturing occurs by pumping a mixture of about 99.5 percent water and sand and 0.5 percent

chemicals through steel casing at high pressure to break the rock which holds natural gas and prop it open so gas can flow to the well. For many years, West Virginia laws and regulations have zealously controlled the fracturing process. Although members of the public have expressed concerns about injection chemicals, the ingredients of fracturing fluid have never been secret. Companies are required to have records of the chemicals on a well location available for review by regulators. One company has published its fluid list on the WVDEP website, and many companies now publish their ingredients on their web pages.

Before water is injected in any gas well, producers must install surface casing (high-strength steel pipe) to a depth below the deepest fresh ground water aquifer, and pump cement between the outside of the surface casing and the earth to seal off the well and ground water. The cementing process is closely reviewed by a WVDEP inspector. After the cement hardens, drilling resumes, and another string of high-strength steel casing is installed and cemented. When the well is drilled to its total depth and length, another string of steel casing is installed so that the energy used in fracturing the well can be applied directly to the target formation a mile or more below the deepest fresh water zone. There are millions of tons of horizontal rock layers between the sealed off fresh water and the area where the fracture actually occurs. An April 2009 report by the Groundwater Protection Council of State regulators states: "It is expected that the probability for treatable groundwater to be impacted by pumping of fluids during hydraulic fracture treatments of newly installed, deep shale gas wells when a high level of monitoring is being performed would be even less than the 2 x 10-8 estimated by API." This equates to approximately one well in 200 million.[1]

Coalbed methane wells are much shallower wells that are completed closer to fresh water aquifers. A 2004 EPA study regarding coalbed methane wells concluded that hydraulic fracturing fluids posed little or no threat to ground water. Nevertheless, the EPA is studying fracturing again.

The final phase of water use is disposal of water pushed back to the surface through the inside of the casing by subsurface pressure from the Marcellus formation. When water is injected, the water that returns generally contains salt compounds from the earth below and must be treated before being discharged. Disposal of flow back water is, and has been, very carefully regulated by the WVDEP pursuant to the West Virginia Water Pollution Control Act, the Groundwater Protection Act, and the statutes and rules applicable to the Office of Oil and Gas. Water can be reused in other Marcellus wells or re-injected in a legally permitted and closely regulated disposal well. Water treatment plants are being developed. A recent study of Marcellus flow back water by Paul Ziemkiewicz, the Director of the West Virginia Water Research Institute, on the internet at **http://anr.ext.wvu.edu/r/download/88455**, should also alleviate some concerns.

Information usually comes in sound bites that never give a clear picture of the whole issue, and are often totally false. The movie *Gasland* shows people lighting gas in their water and blames the gas drilling industry without examining the origin of the gas. Gas drillers have been cleared in at least two instances where ignitable gas has been found in water. The Texas Railroad Commission cleared a producer and found that ignitable methane was in water because a water well was drilled to a water aquifer that contained gas. Colorado oil and gas officials found that gas in drinking water was not caused by oil and gas drilling operations. People forget that William Rathbone found oil and gas bubbling on the surface of Burning Springs in West Virginia. Natural gas is found at many depths; sometimes in fresh water. When captured and processed, it creates invaluable sources of energy and petro-chemicals. Almost half of our homes use gas, oil or propane, and almost 20 percent of our electricity is gas generated. Today, let's use sound environmental practices and produce the gas and liquids in the Marcellus Shale to provide part of the energy our country so desperately needs.

An example of an impoundment

Footnotes:
[1]http://www.gwpc.org/e-library/documents/general/Shale%20Gas%20Primer%202009.pdf

The Marcellus in Pennsylvania: The Horizon Looks Exciting!

Louis D. D'Amico, President and Executive Director
Pennsylvania Independent Oil and Gas Association

Louis D. D'Amico serves as president and executive director of the Pennsylvania Independent Oil & Gas Association (PIOGA) and, prior to the merger of IOGA and POGAM, he served as executive director of IOGA of Pennsylvania since 1995. Prior to joining the association, he spent 23 years in the industry in engineering, gas marketing and operations management.

Following graduation from the Pennsylvania State University with a BS in petroleum and natural gas engineering in 1972, Mr. D'Amico joined the Peoples Natural Gas Company as a drilling and production engineer. In 1978 he was recruited by Wainoco Oil and Gas Company, a Houston, Texas-based independent producer, to develop and manage operations in Pennsylvania, New York, Michigan and West Virginia. He joined Industrial Energy Service Company (IESCO) in 1991, after the sale of Wainoco's properties.

In addition to his engineering degree, Mr. D'Amico holds an MBA from Gannon University and is a registered professional engineer in Pennsylvania. He was one of the founding board members of the Pennsylvania Natural Gas Associates, which became IOGA of Pennsylvania.

Marcellus Shale development promises to be the biggest economic development event in Pennsylvania in more than a century. A study by the Pennsylvania State University claims 88,000 new jobs have already been created in the Commonwealth as a result of the Marcellus, with 200,000-plus jobs predicted for the future. For a state that traditionally has produced only one-fourth of its natural gas consumption, Pennsylvania has now reached a point where it is a net exporter of natural gas to the rest of the country.

One community in the state, Williamsport, is now the home of 80 new companies, all dedicated to servicing one part of the Marcellus industry or another. The most surprising aspect of this new industry is that many of the jobs being created are in parts of rural Pennsylvania that have struggled with economic malaise for decades, to the point where worker shortages are beginning to be a problem!

To deal with the workforce needs of industry, PIOGA has been actively working with the various Workforce Investment Boards and educational providers. The Association has worked in developing the statewide ShaleNet program of educators, encouraging consistency of curriculum design among the educational providers. We also have been an active participant and supporter, along with the Allegheny Conference, to secure a $4.9 million federal grant for workforce education and preparation.

Through our outreach efforts, PIOGA has stressed the workforce needs and development message to encourage workers, young and old, to enter our industry. We are striving hard to overcome the strong misconception that the majority of our workforce is made up of employees from the Southwestern United States, brought in by out-of-state companies – a clearly false premise often mouthed by industry opponents.

PIOGA
Pennsylvania Independent Oil & Gas Association

PIOGA and other national and regional associations have undertaken an aggressive campaign to combat the ever-growing onslaught of misinformation and fundamental lies being spread by rabid environmental activists trying to stop natural gas development in the Commonwealth. No bigger challenge faces the industry than this propaganda campaign waged by our opponents. Unfortunately, the mainstream media have seized on this environmental hysteria while making little or no effort to check the veracity of these often wild claims.

Supply chain issues loom large on PIOGA's radar. We are making every effort to assure that Pennsylvania-based companies are, at a minimum, being considered to supply the many goods and services necessary for natural gas development. The broader participation by Pennsylvania-based companies in natural gas development will have far-reaching benefits to the Commonwealth's economic condition, as well as having significant political benefit.

For all the benefits of Marcellus Shale development in Pennsylvania, there have been drawbacks. Pennsylvania's regulatory programs relating to oil and gas development have been among the most stringent in the nation for decades. Many regulators and legislators feel the need to continually examine the regulations, changing interpretation of existing regulation and broadening the scope of regulation – creating delays and often unwarranted costs to development. The

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good news is that Pennsylvania's Department of Environmental Protection has seen the regulatory regimen as an evolutionary process, and has been involving industry more in the developmental stages of new regulations. The result ultimately will be regulations that strongly protect the environment, while not stifling development.

One of the more onerous discussions that has arisen in Pennsylvania is the almost daily call for imposing a severance tax. The common thread in this conversation is that the "rich oil and gas companies" pay no taxes. If only that were true! Unlike many other oil and gas producing states, Pennsylvania has one of the highest corporate net income taxes in the nation. For companies not subject to corporate taxes, few of the deductions allowed to LLCs federally and in other states are allowed in Pennsylvania. The industry has done a poor job of communicating the taxes we do pay, and the potential impact a severance tax would have on investment and job creation. PIOGA continues to do battle against severance taxes in Pennsylvania.

The impact on the Pennsylvania Independent Oil and Gas Association has been largely positive. Our membership base has grown to nearly 900 members with continuing growth. Our staff, which had been two people for decades, has more than tripled in size. We have just added an in-house counsel and increased the size of our communications staff. We have dramatically increased our outreach and education efforts. We have increased our efforts on the national stage with the Independent Petroleum Association of America (IPAA). Here in Pennsylvania, we have entered into a partnership with the American Petroleum Institute to create the Keystone Energy Forum, a grassroots educational program separate from our advocacy efforts.

The horizon looks exciting for Pennsylvania and the Appalachian Basin. PIOGA intends to continue its growth and involvement, to match the economic growth the Commonwealth can look forward to. V

Growth and Opportunity in the Appalachian Region

Andrew Lane, Chairman, President and Chief Executive Officer
McJunkin Red Man Corporation

Andrew Lane has served as president and chief executive officer of McJunkin Red Man Corporation since September 2008 and became the chairman of the board in December 2009.

He formerly served as executive vice president and chief operating officer of Halliburton Company, where he was responsible for overall operational performance, managed over 50,000 employees worldwide and oversaw several mergers and acquisitions integrations. Prior to that, he held a variety of leadership roles within Halliburton, including serving as president and chief executive officer of Kellogg Brown & Root, Inc., senior vice president, global operations of Halliburton Energy Services Group, president of the Landmark Division of Halliburton Energy Services Group, and as president and chief executive officer of Landmark Graphics Corporation.

Mr. Lane began his career in the oil and gas industry as a field engineer for Gulf Oil Corporation in 1982, and later worked as a production engineer in Gulf Oil's Pipeline Design and Permits Group. He received a B.S. in mechanical engineering from Southern Methodist University and currently is a member of the executive board of the Southern Methodist University School of Engineering.

For 90 years McJunkin Red Man Corporation (MRC) has been serving the Appalachian region. This region remains one of our most exciting opportunities for continued growth, due to the activity throughout the Marcellus Shale formation.

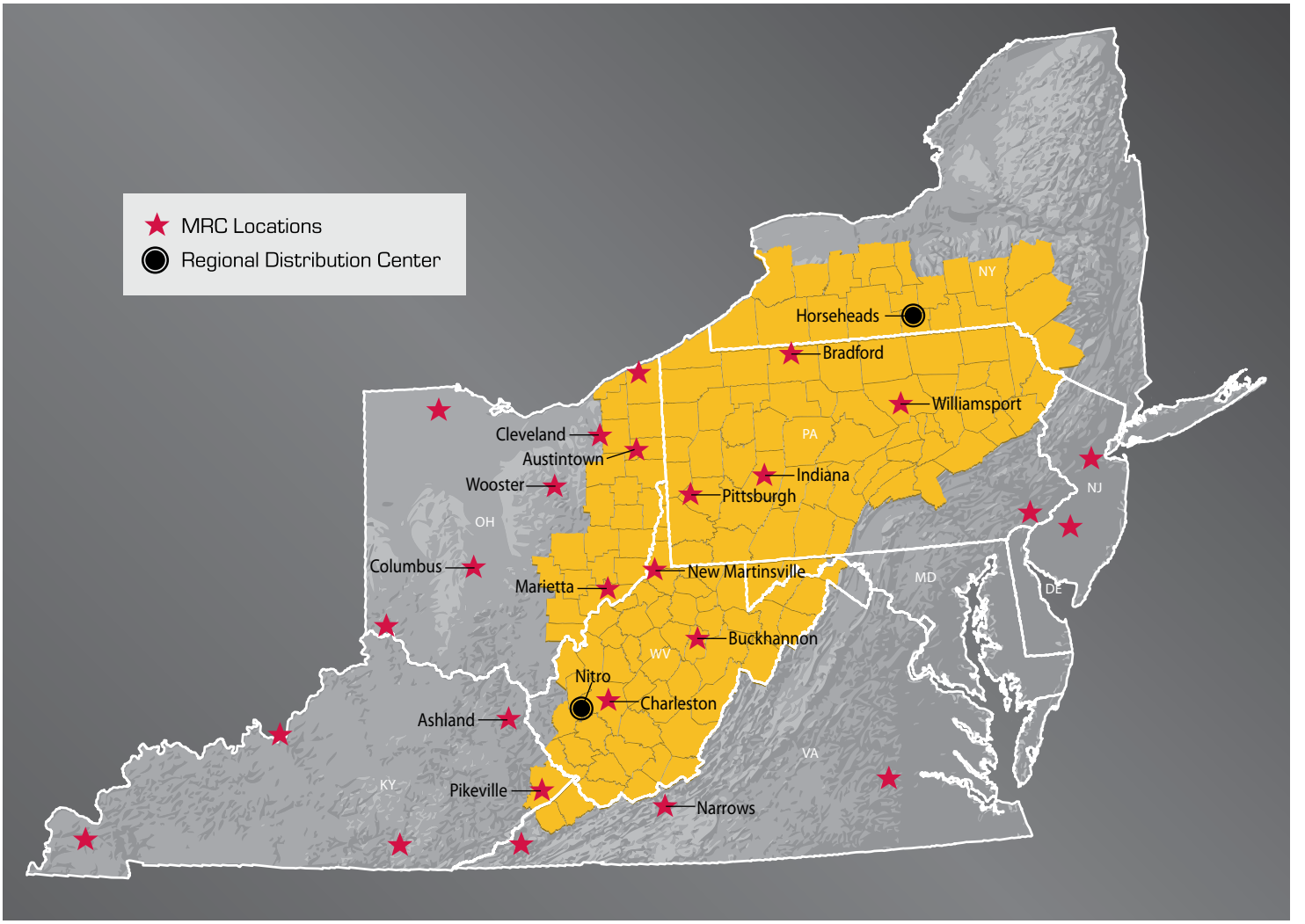
The discovery of potentially more than 500 trillion cubic feet of natural gas in the Marcellus Shale play has brought an explosion of growth to the region. Just 10 percent of the formation's predicted capacity could produce enough natural gas to power the entire United States for close to two years. That kind of potential is significant – even for a company with a global reach.

This massive formation has added a new aspect to the way we do business in the eastern United States. The development of horizontal drilling has made gathering natural gas from the shale formations economical for the first time, while

MRC McJunkin Red Man Corporation

simultaneously opening the door to a multitude of new opportunities for both suppliers and producers. Not only are our established, local customers turning their eyes to the vast resources beneath their home towns, but larger oil and gas companies, many of which MRC has long-term national and global relationships with, are also actively exploring the Marcellus by taking advantage of this advancement in technology.

Horizontal drilling has given a shot of adrenaline to the regional midstream market due to the significant amount of pipe, valves and fittings needed to transport natural gas to storage or treatment facilities when drilling in this fashion. Conventional wells depend on smaller diameters of mostly carbon-coated pipe to transport



The McJunkin Red Man Corporation has many servicing branches as well as two distribution centers located throughout the Marcellus Shale formation

resources. For unconventional wells, larger diameter pipe, valves and fittings are necessary for the more complex gathering systems as part of transportation networks.

In order to support oil and gas exploration and production, as well as the pipeline and transmission infrastructure, MRC plans to expand operations and inventory in the Marcellus Shale, both organically and, potentially, through acquisition. I envision the shale formations playing an important role in the future of energy in the United States. MRC has invested and will continue to invest in that future.

We have expanded our servicing capabilities in such a way to specifically cater to the needs of customers drilling in the Marcellus. I am particularly proud of our new 50,000-square foot warehouse in Horseheads, New York, and our existing 120,000-square foot warehouse and 13-acre pipe yard in Nitro, West Virginia – a facility complete with a valve automation center. We also have doubled the size of our servicing location in Buckhannon, West Virginia, and added a new location in Williamsport, Pennsylvania. New employees and resources also have been added to most of our locations responsible for servicing our customers in this region.

MRC is committed to be the best provider of pipe, valves and fittings (PVF) products to support our customers' plans in the major North American shales, including the Marcellus. As a company, our roots are in the Appalachian region. We are looking forward to a bright future full of opportunity, not only for ourselves but also for the entire region, that will benefit from the pulsing addition of the Marcellus formation into the local economy.

Innovation Creates Opportunities To Grow Economy

W. Henry Harmon, President and Chief Executive Officer
Triana Energy, LLC

Henry Harmon is president and CEO of Triana Energy, LLC, and also is a private investor in a number of other energy related enterprises. He formerly was president of Columbia Natural Resources, one of the largest natural gas production companies in the eastern United States, before its sale to Chesapeake Energy in 2005. He also served as president and director of Union Drilling, Inc. when it was the largest privately owned contract drilling company in the country.

Mr. Harmon holds a bachelor of science degree from West Virginia University Institute of Technology, a master of science degree in management from The American College and a Ph.D. in economics from The Union Institute in Cincinnati, Ohio. He also has earned the professional credentials of Certified Public Accountant and Certified Management Accountant and was recognized nationally in 2006 when inducted into the AICPA's Business and Industry Hall of Fame.

Mr. Harmon is active in a number of business, education and community organizations in the area, serving as trustee for The University of Charleston, chairman of The Greater Kanawha Valley Foundation, and trustee of the Triana Charitable Fund. He previously served six years on the board of directors of the 5th District Federal Reserve Bank of Richmond.

On March 6, 2011, Milford Shoffner died at the age of 84. Though you probably have never heard of him, Milford Shoffner was one of the pioneers of the natural gas industry in Appalachia. I first met Milford a dozen years ago when the company I then led drilled a spectacular well in Roane County, West Virginia, that we could not control. Milford, already in his 70s, was who we called to solve the problem.

Milford Shoffner was part of a small band of men who came into the region in 1955, prepared to operate the first rotary drilling rig that was ever seen in West Virginia. He became revered for his knowledge of drilling rigs and his innovation in their use. The rotary drilling rig replaced the original cable tool rig design and introduced real engineering into the industry in place of the former design that relied on brute force. Life in this part of the world would never be the same.

Typical traditional style cable tool rig

Innovation continues today, as the industry experiments with new ways to reduce consumption of water, improve air quality, and minimize the footprint in our forests.

Today, the oil and natural gas industry is one of the most innovative industries in the country. While shameful incidents like the BP Macondo well blow-out have tarnished the public reputation and credibility of the industry, this is not representative of the industry I know.

Over the past decade the industry has produced innovation at an accelerating rate. Probably the most significant invention has been the design and refinement of horizontal drilling techniques. This new approach to drilling wells allows developers to recover as much as 40 percent of the hydrocarbons that are targeted by drilling new wells. In the past, vertical wells drilled on the traditional 80-acre spacing could be expected to release, at most, about 16 percent of the hydrocarbons in the rock formation. This one innovation is recognized as having doubled the potential of our domestic energy resources, which will create a more secure and prosperous country.

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A rig in Pennsylvania, near the New York border, drilling for Triana in 2004

The next most significant innovation was initiated nearly three decades ago by George Mitchell in central Texas. He pioneered the use of hydraulic fracturing as the standard way to unlock the energy resources trapped within shale formations. Today, countries all over the world are unlocking enormous new sources of energy because of this invention. Mitchell Energy was sold in 2002 for $3.1 billion, solely because George Mitchell resisted his critics and proved his theory worked.

Innovation continues today, as the industry experiments with new ways to reduce the consumption of water, improve air quality and minimize the footprint of operations in our forests. Some of the most promising work involves the application of what is called "under-balanced drilling" to drill wells using only compressed air as the circulating medium. More systematic fracturing techniques are being designed to improve the efficiency of the process; using catalysts like compressed air, micro-waves, cryogenic processes or sonic tools. And more efficient processing plant designs, located strategically between production fields and markets, are helping to create new jobs and opportunities to grow a new economy.

The United States has an abundant supply of natural gas that can fuel its quest for prosperity for generations to come. It will be delivered by the ingenuity of pioneers who, like Milford Shoffner, are dedicated to growing this industry, building our communities and preserving our environment.

We know th

Representing industry leaders for more

Bowles Rice has been representing oil and gas companies in West Virginia and throughout the region for more than 60 years. We have a long history as a recognized leader in natural resources law, but our focus is on the future. Bowles Rice has a wealth of knowledge and experience regarding the Marcellus Shale formation and our lawyers are assisting clients in all aspects of Marcellus development, including strategic planning, acquisition and leasing of mineral interests and pipeline rights of way and permitting Marcellus wells.

With more than 120 attorneys practicing in offices throughout the region, we have the resources to get the job done. Our clients include production companies, operating companies, well-servicing companies, pipeline companies, small utility companies, construction companies and land holding companies. If you are looking for a firm that has experience and depth, choose Bowles Rice. When it comes to oil and gas law, ***we know the drill***.

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Natural Gas Production in Appalachia: Exploring the Devonian Shale Through Time

J. W. "Willard" Kinzer, President
Kinzer Drilling Company, LLC

J.W. "Willard" Kinzer has been involved in drilling nearly all of his life, starting at age 15. In 1951 Mr. Kinzer took over and began expanding the family-owned water well drilling business, and in 1956 started the natural gas division.

Mr. Kinzer is widely known and respected for his innovations in exploring and developing the Devonian Shale play in southern Appalachia. He has made innovative contributions in the air-drilling industry as well as in cementing practices in well completion.

The Kinzer family companies now operate more than 2,000 wells in the Big Sandy Basin, with production in excess of 32,000 DTH/D.

The innovation and drive that Mr. Kinzer has exhibited throughout his life has carried over into his personal life. While in his late 40s, he began a motorcycle hill-climbing career that awarded him several United States and Canadian titles. At the age of 79, he started a drag racing career which brought him two consecutive Outlaw Street Fight titles at Bristol's Thunder Valley Drag Strip in Tennessee.

Perhaps the most important contribution of all has been Mr. Kinzer's non-wavering and generous support of the community. He has served on the board of directors and supported the Kentucky Opry, Pikeville College and the Jenny Wiley Theater. He also is a key contributor to the Wesley Christian School in Allen, Kentucky.

Kinzer Drilling Company, LLC

Since I began drilling for natural gas in the 1950s, changes in drilling techniques and also gas well stimulation and completion have gone through an amazing metamorphosis.

I got my start at drilling at the age of 15, working for my father. We drilled water wells in eastern Kentucky and the surrounding area for several years. My father passed in 1951 and I took over the business, operating a 240 Speedstar. When I first started drilling for natural gas in 1956, I used a Bucyrus-Erie Cable Tool Spudder. To drill through the Devonian Shale (typical depth of 3,500 to 4,000 feet) during this time period took 70 to 80 days (drilling 24/7).

The Bucyrus-Erie rigs were the epitome of portable cable tool rigs in their day

Around 1979-80, I purchased the first air-hydraulic rotary drill in this area. This was an Ingersoll-Rand T4 rotary. The T4 could only run 21-foot (Range I) pipe, but even at that, it reduced the time to drill through the Devonian to only seven days. In short time, I began conversations with Ingersoll-Rand to develop a T4 rig with an extended mast that could handle Range II pipe. We seemed to be on to something, and I continued to work closely with Ingersoll-Rand and talked them into developing the RD-20, which could handle Range III pipe. Ingersoll-Rand tested the new rig for several months in Texas and then turned it over to me to "see what it could do." This new rig had a faster, variable speed rotation, much more pullback (in excess of 100,000 lbs.), and a customized addition that is still listed in the RD-20 parts book as the "Kinzer Table" (rotary drill table on the RD-20). In 1989, we got the RD-20 to drill 7020 feet in seven days in Perry County, Kentucky.

Early well completion in the Devonian Shale was performed via "shooting the well."

The J. W. Kinzer Drilling Company took this Ingersoll-Rand RD-20, 110,000 lb. pullback rig to a new depth – 7,020 feet – in just seven days. The company achieved success by using hammer bits and aluminum drill pipe.

This consisted of lowering some nitroglycerin and tin torpedoes into the hole to fracture the earth and stimulate the gas flow. Sand and CO_2 fracturing was soon to follow, and in the 1980s we settled on the method we still use today, nitrogen fracturing. Liquid nitrogen is pumped down-hole at high pressures to fracture the earth and stimulate gas flow. The nitrogen then returns to a gaseous state and is recovered from the well. While I believe that there is no doubt that horizontal drilling and hydraulic fracturing is needed to develop the Marcellus Shale, in southern Appalachia we continue to have success with conventional vertical drilling and nitrogen fracs without all the expense and environmental issues. We also have had some innovation in well completion for cementing casing.

We had always run into problems when cementing the casing, in that once enough weight would accumulate, we would lose the cement down-hole. We experimented with some different mixes on the cement and came up with a pretty good formula. If you use Halliburton or Schlumberger, just ask for the "Kinzer mix."

When asked about what I felt was one of the biggest impacts or surprises about natural gas, I would have to say it is still the lack of widespread, natural gas-powered vehicles. Natural gas-powered vehicles have been around and talked about for 20 to 30 years, but there has not been much of a push in this direction. I have always felt that, other than a few technology issues, it has been the lack of faith in believing that the supply could meet demand. I think we have proven that the supply is there, and some Devonian Shale wells have now been producing for more than 100 years. Major shale plays have been discovered in the Barnett, and currently the Marcellus, and many more are expected. I really feel that with this kind of supply and developing technology, we could really make a dent in our dependence on foreign oil.

In closing, I would like to stress that natural gas continues to be an abundant clean-burning natural resource that can lead to complete foreign energy independence. We need to continue to work on a pipeline infrastructure that can supply gas to all areas of the country and develop new technologies in liquefied natural gas and compressed natural gas. V

Married to the Marcellus

Jack M. Lafield, President and Chief Executive Officer
Caiman Energy LLC

Jack M. Lafield is the co-founder, president and CEO of Caiman Energy, LLC, a midstream energy company focused on the design, construction, operation and acquisition of midstream assets. Caiman serves exploration and production companies by providing natural gas gathering, compression, transportation, measurement, treatment, fractionation, and processing infrastructure and services.

Mr. Lafield is a member of the Marcellus to Manufacturing Task Force, formed by West Virginia's acting Governor, Earl Ray Tomblin. The goal of the 12-member group, composed of key industry leaders, is to attract employers that convert ethane, a compound removed from natural gas during the refining process, into the widely-used chemical compound ethylene.

Prior to forming Caiman Energy in 2009, Mr. Lafield served as the executive vice president of corporate development for the Crosstex Energy companies, Crosstex Energy, Inc. (NASDAQ: XTXI) and Crosstex Energy L.P. (NASDAQ: XTEX).

Mr. Lafield holds a bachelor of science degree in chemical engineering from Texas A&M University and is a graduate of the Executive Program at Stanford University. He has served on the board and is a current member of the Gas Processors Association and is a member of the Dallas Petroleum Club and the North Texas Natural Gas and Power Association. He also is a member and past chairman of the Texas Intrastate Pipeline Association.

The Marcellus Shale formation – which extends across parts of West Virginia in the northern Appalachian Basin into Pennsylvania and New York State – has stirred considerable excitement over the past two years for its potential to bring larger volumes of natural gas to major markets in the northeastern United States. By some estimates, it is the second-largest known natural gas play in the world and the largest geographic gas producing area in the U.S.

While natural gas production in West Virginia has long taken a distant second to coal production as the state's chief energy export, West Virginia's elected officials are demonstrating their own sense of excitement over the new prospect of more prolific development of the state's natural gas resources – particularly in the rich gas production area of northwestern West Virginia. State and regional leaders have indicated that they are enthusiastic about new jobs, economic development and growth. These officials are helping to create a business-friendly environment that continues to build strong partnerships.

At Caiman Energy, we are excited about this new growth and these new partnerships as well. To date, Caiman has made more than $300 million in investments in the rich gas regions of West Virginia and Pennsylvania. Beginning in the summer of 2009, we have focused our investments on building capital-intensive infrastructure required to bring natural gas and related hydrocarbons from the wellhead to markets in New York, Philadelphia and throughout the northeast.

CAIMAN ENERGY

Without significant upfront investment in "midstream" infrastructure in the rich gas region of the Marcellus, drilling cannot occur because it is not economically viable without it. Investments in infrastructure will provide a network of pipelines and midstream assets that will encourage producers to continue to invest capital in exploration activities. The Caiman team is proud to have stepped up alongside exploration and production companies to make the early and ongoing financial investments necessary to ensure that this region of the Marcellus will realize its vast potential.

Investments in state-of-the-art infrastructure and processing bring rich natural gas from wellhead to market

Currently, Caiman Energy is focused on expanding its gas gathering and processing capabilities in the Marcellus Shale. We have more than 500,000 acres committed to our midstream services in the Marcellus Shale at present. We have contracted with several producers, and – as the weather breaks this spring – we will increase the speed of pipeline construction, expanding our growing network of high-pressure and gathering pipelines and our processing capacity so that producers will be able to increase their production and delivery of natural gas throughout the region.

Caiman's commitment in the Marcellus is one of many being made in the interest of economic development. The many benefits to the region, including job creation, have been noted by economists and industry leaders across the Marcellus Shale states. The West Virginia University College of Business and Economics, in a study released in December of 2010, reported that gas producers invested some $2.35 billion to develop the Marcellus Shale in West Virginia in 2009, resulting in the creation of some 7,600 jobs. The study found that natural gas and oil-related employment levels in West Virginia, related to wells, pipelines and construction increased by 49 percent in 2009, and it credits the Marcellus Shale development as the driving force behind those employment figures. The study went on to estimate that by 2015 the Marcellus Shale could bring another 20,000 jobs to the state's northern region alone.

New jobs will come not only in production and transportation of natural gas and its products, but in related areas of industry and commerce: construction, business and legal services and consumer retail. Caiman Energy, as one of the major players in the West Virginia Marcellus, has additional investment capital available to be invested in the region, and we are doing our part to build state-of-the-art infrastructure that will service quality natural gas production for a long time to come.

If you have walked the Marcellus Shale region, as I did with my partners at Caiman Energy in May of 2009, you have seen that this is an area of rich and exceptional beauty. Beneath the mountains and their streams, rivers and wooded hills, there is what promises to be one of the nation's most significant gas deposits. Trapped in layers of shale is an abundance of clean-burning natural gas and hydrocarbons processed from it: methane, ethane, propane, butane and other valuable gases. They are accessible now because drilling companies have married two proven exploration processes – hydraulic fracturing and horizontal drilling – which have made large-scale shale production economically viable. New achievements in extraction techniques, processing and transportation have helped develop both safe and environmentally sensitive procedures for producing and delivering natural gas. And so, where there is beauty above, there is also a different sort of beauty below. Caiman understands the importance of safely developing the abundant resources below while protecting the natural beauty above.

Caiman Energy was an early participant in the growing Marcellus Shale gas play

The Beeler Plant 1, located near Cameron, West Virginia, is a Marcellus gas processing plant

As the energy industry becomes more involved in discussions about climate change and the need for environmentally sound energy alternatives, natural gas will take a leading role in the transition to cleaner-burning fuels and a greater independence from foreign oil. That is why the Marcellus and other major US gas plays – now accessible because of new technology – are emerging as import factors in America's energy strategy and one answer to an energy-hungry economy.

West Virginia is an energy state whose roots go deep in the development of our nation's energy reserves. Its vast deposits of coal have long fueled our country's power plants, and it has also supplied traditional natural gas products to markets for decades, resulting in a legacy system of pipeline infrastructure that has served the needs of industry, commercial and residential customers for many years. But that infrastructure has aged, its capacity for high-pressure gas transportation is inadequate, and it is not sufficient for the technological advances that will bring the volume of natural gas we expect today. That is why Caiman is here.

When Caiman Energy's partners first looked at the Marcellus Shale in 2009, our reaction was immediate, positive and productive. Since then, our commitment in terms of dollars and presence has grown steadily. By the end of 2011, we expect to have in excess of $400 million invested. We have completed our initial cryogenic processing facility, the Fort Beeler Processing Plant I, near Cameron, West Virginia, and it is online with a capacity of 120 million cubic feet per day. By late 2012, we expect to have processing

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Collaboration, Cooperation and Conservation: Why Not?

F. Thomas Graff, Jr., Partner
Bowles Rice McDavid Graff & Love LLP

Tom Graff acted as Managing Partner of Bowles Rice McDavid Graff & Love from 1986 to 2007. He is currently the leader of the firm's energy department.

He practices in the areas of energy law, business and commercial law and banking law. He has been involved in acquisitions and sales of businesses or business assets, with extensive experience in the purchase and sale of coal, oil and gas assets and properties.

Mr. Graff currently serves as director and executive committee member of United Bankshares, Inc., director of Fahlgren, Inc. and chairman of the board of directors of the Bank of Mt. Hope. He is the president and director of Graff-Lane Properties, LLC, and serves as one of three trustees for 12 private trusts involving oversight of several businesses and numerous passive investments. He is chairman and president of the Chemical Alliance Zone, a director of the West Virginia Chamber of Commerce and a director emeritus of the West Virginia Roundtable.

Mr. Graff earned his bachelor of arts degree and a law degree from West Virginia University. He is recognized by *Super Lawyers*,® Chambers USA and *Best Lawyers in America*,® which named him 2011 Corporate Lawyer of the Year in Charleston, West Virginia.

The majority of this issue of *Views & Visions* examines the basics and ramifications of developing the Marcellus Shale gas formation from both the upstream and downstream prospectives. I totally endorse the most expansive development imaginable to expand West Virginia's basic economic industries. All the reliable information available to us confirms that the Marcellus Shale gas reserve is the largest natural gas reserve in the United States, and will provide gas supplies for decades – truly a phenomenal asset for West Virginia. Accordingly, the concepts and plans conceived and designed at this time for the Marcellus Shale must be equal in magnitude and durability to the asset itself.

My purpose in this article is to suggest that the energy community, the government and other interested parties should examine ways to create further economic successes through opportunities that can be achieved by collaboration and cooperation.

The collaborative and cooperative effort must be founded on the concept of conservation for the good of all. Conservation contemplates the effective capture and utilization of our finite quantities of natural resources to their fullest, at the least cost and with the least damage possible to our citizens and our environment. The concept of conservation includes fairness to each party involved and a balancing of damage to the extent involved.

Multiple bills were introduced in the 2011 session of the West Virginia Legislature, seeking to govern or regulate many aspects of the Marcellus Shale gas development. Unfortunately, no meaningful legislation was passed. We need those laws, rules and regulations to encourage the full development of Marcellus Shale gas under reasonable regulation. I also believe that those new laws must fully embrace, adopt and protect the concept of conservation.

The production of gas from wells using horizontal drilling techniques is a prime example of conservation. These wells drain the gas from under huge areas of surface lands by using one drill site for multiple wells, with each well reaching thousands of feet from the drill site in different directions. Not only does this disturb less surface land, but the wells on average produce greater quantities of gas for the producer than traditional vertical wells and are proportionately more cost effective. The owners and operators of coal underlying the lands are benefitted because the wells all penetrate the coal seams only in limited drill site areas. The owners of the oil and gas are paid both rentals and royalties for their gas, and the surface owners as a whole have less damage, due to confined areas (drill sites) where most damage and disturbance occur.

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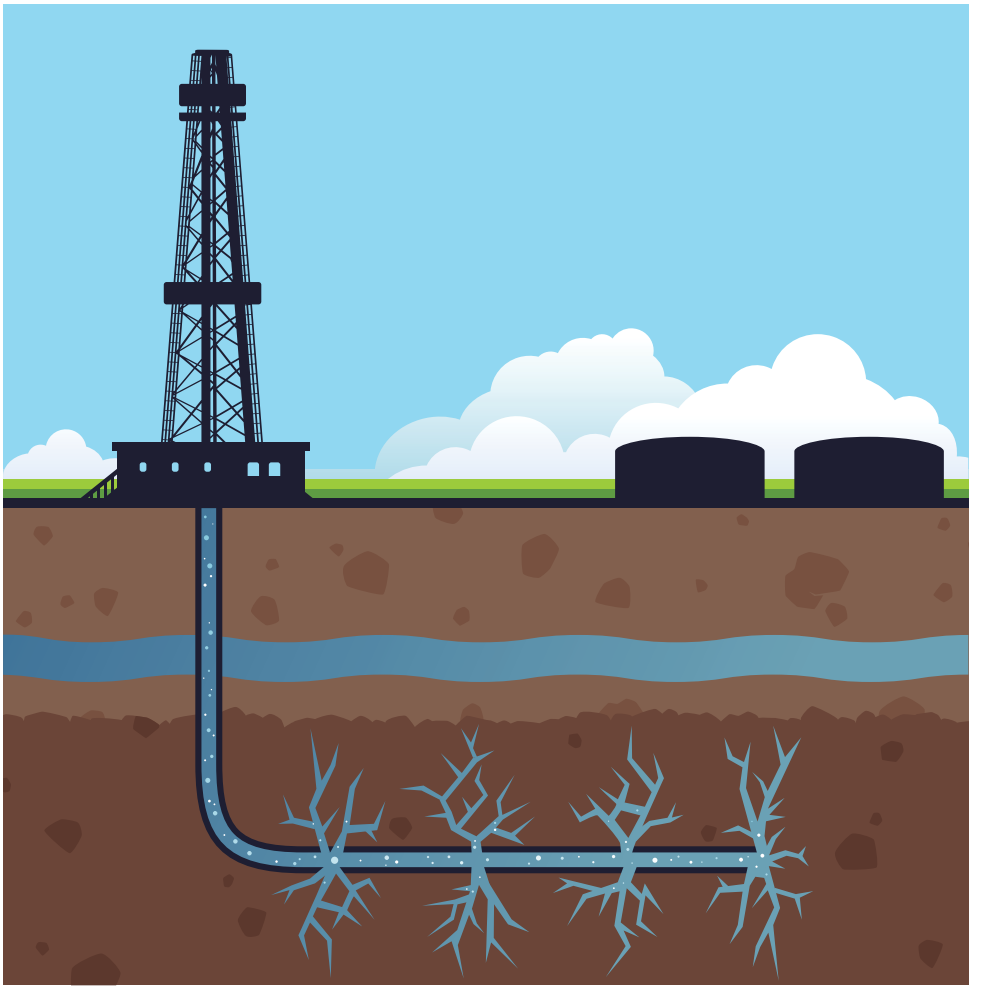

An illustration of the horizontal drilling technique

While this may appear to be a perfect scenario, some concerns do exist. In many cases we have surface owners of the drill site without any interest in the minerals; groups concerned with the possible pollution of water or other environmental concerns, including damage to, or overusage of, public roads; and owners (potential lessors) or current lessees of gas who may, or may not, want to be part of a collaborative development of the gas. There are equitable ways to deal with each of these concerns, mainly through legislation or regulation, but the end must be to achieve full development of the natural resource while observing the concept of conservation to the fullest extent possible, for the ultimate benefit of the people of the state of West Virginia.

This same principle of conservation applies in many other areas of the energy world. For more than a century, the lands of West Virginia have been explored for oil, and hundreds of thousands of wells have been drilled to extract oil. It is generally accepted, in petroleum engineering circles, that primary recovery of oil from an oil-bearing formation is less than 15 percent of the oil in place. This means that most previously produced oil formations in West Virginia still have 85 percent of the original oil reserve in place.

Secondary and tertiary recovery of oil is extensively used around the world, every day, to efficiently produce oil. Depending upon the sophistication of the recovery process/method, another 15 percent of the original reserve can be recovered through established, cost-effective secondary recovery methods. There currently are dozens of small secondary oil recovery projects in operation in the state of West Virginia, and many are very profitable. Likewise, there are literally hundreds of old oil fields throughout the state, in final stages of production or abandoned. Their formations still contain large amounts of oil suitable, in most respects, to secondary oil recovery projects.

For at least four years there have been extensive national discussions about the sequestration of CO_2 from the exhaust towers of coal-fired electric power plants. Several projects are underway to capture and dispose of CO_2 to save the planet from global warming, or climate change, as it is now called. Electric power companies are spending enormous amounts of money to comply with governmental regulations. At some point in the process, perhaps an entrepreneur, a governor or a legislator – or all three – should identify several old oil fields in the vicinity of existing coal fired power plants and investigate whether the fields can be engineered to produce oil through secondary recovery with the use of CO_2 as one of the stimulants for production.

The CO_2 can be moved safely and inexpensively to the oil field by truck or pipeline. Hypothetically, this will provide a way to dispose of the CO_2, which should be a great benefit to the power company and a handsome reward for the secondary recovery producer of oil production, selling at current prices of more than $100 a barrel – not to mention all the jobs created in the process. Even the residents of the recovery area will receive the indirect benefit of having all the old oil wells within the secondary recovery project area properly plugged, removing the threat of underground contamination of water formations in the area. All the while, we will have observed the conservation of our natural resources and assisted in the implementation of an environmental objective.

Finally, I want to recognize the huge opportunity that the state has in the downstream processing of ethane gas from the Marcellus Shale and, potentially, equally productive deeper natural gas formations. If West Virginia can attract one or more facilities known as "crackers,"

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What a Diff'rence a Day Makes!

Lloyd G. Jackson, II, Vice President
Jackson Gas Company

Lloyd Jackson of Hamlin, West Virginia, is an attorney and businessman. He and his father, Lloyd Jackson, Sr., operate their family's natural gas production business, an industry in which their family has made their living for over 100 years.

Mr. Jackson graduated Phi Beta Kappa from West Virginia University with a degree in political science. He attended the West Virginia University College of Law, where he served as editor-in-chief of the Law Review and graduated Order of the Coif.

He served as prosecuting attorney of Lincoln County, West Virginia, for six years and as a state senator for 12 years, chairing the Judiciary and Education Committees. During his legislative service, Mr. Jackson is best known for his writing of the PROMISE Scholarship legislation and the Comprehensive Early Childhood Legislation.

He currently serves as a trustee of the Claude Worthington Benedum Foundation, the largest charitable foundation serving West Virginia, chairman of the Board of Trustees of West Virginia Wesleyan College, a director of the West Virginia Oil and Natural Gas Association, president of Energize West Virginia and a director of the Marshall University Research Corporation, the Discover the Real West Virginia Foundation, Kids Count West Virginia, the Clay Center for the Arts and Sciences and The College Summit West Virginia.

"What a Diff'rence a Day Makes!" The title to the old Dinah Washington standard describes the change that has occurred in the natural gas fields of southern West Virginia. The "diff'rence" might have taken a little more than a day, but only a few short years ago, operators in southern West Virginia endured the usual pains of a major gas play, some of which were:

- Leaseholds were scarce and expensive to obtain;
- Mergers and acquisitions occurred on almost a daily basis;
- Pipe and equipment prices skyrocketed;
- Available rigs were scarce and inevitably migrated away from the smaller operators to the larger players;
- Equipment for cementing, fracturing and otherwise stimulating wells was difficult to engage, and the larger players took precedence over the smaller operators; and
- Qualified new employees were difficult to find, wages escalated and new training programs sprang up around the gas fields.

As a small operator, I experienced these pangs personally. The drilling company we had used for years "fired" us and dedicated all its rigs to the larger operators. Among the major well service companies, one advised us they no longer would be available; one raised prices to the level that effectively told us they no longer were available, and one limited its availability to just one day per week – and we were thankful for that. The larger companies hired a number of my employees by offering wages and benefits small operators simply could not match.

But that was then and this is now. Today, few, if any, rigs are operating in southern West Virginia. There almost is no activity. Why? There are two related reasons:

1) Natural gas prices have plummeted from over $12.00/dth to under $4.00/dth; and
2) The costs of exploration and production have not followed prices lower, but have continued to increase.

These two reasons work in tandem. The natural gas industry has experienced wild price swings over the years, but this time it is different in southern West Virginia. Usually when prices decline so dramatically, costs decline with them. Historically, operators made nice profits when prices were high, but when prices declined, exploration and production costs tended to decline as well, and lower costs made it possible for operators to maintain profits, albeit at lower levels. That dynamic has not occurred in this downturn. Costs have not followed natural gas prices lower, so the cost of drilling and producing a natural gas well in southern West Virginia simply outstrips the ability to make a profit on the project.

In this natural gas basin, the principal reason the normal price/cost mechanism has not worked as usual is simple: Marcellus Shale. The robust Marcellus Shale play in Pennsylvania and northern West Virginia has sustained the demand for rigs, equipment, pipe and employees, and there has been no reason for suppliers of goods and services to lower costs,

even as natural gas prices declined. The large volumes produced by the Marcellus Shale wells make it possible for operators in the Marcellus field to gain a profit at the current level of prices and costs and, where combined with price hedging mechanisms, some of those profits are handsome indeed. Put simply, although the cost of drilling Marcellus Shale wells is substantially more than drilling vertical or even horizontal wells in southern West Virginia, the much larger volumes produced from the Marcellus Shale wells make a profit possible even at the current high level of exploration and production costs. With profits possible at current prices in the Marcellus Shale field, there has been no reason for suppliers of goods and services to lower costs. In fact, most costs have escalated.

So what about tomorrow? Is there a future for the southern West Virginia natural gas fields? Undoubtedly the answer is yes, but timing is the big issue.

In the industry meetings I attend, many experts see a number of factors coalescing in 2011 and 2012 that should lead to more opportunity in the southern West Virginia natural gas fields:

- Traditional demand for natural gas will grow as the world and United States economies recover from the worst downturn since the Great Depression, and prices will follow demand;
- With few, if any, new coal-fired power plants approved in the past few years, and with several older coal-fired plants scheduled for retirement in 2011 and 2012, especially in the Midwest and South, demand for natural gas for electric generation should grow, and that demand also should increase as the economy recovers;
- Any significant move to address greenhouse gases will result in increased use of natural gas, the cleanest-burning fossil fuel, at least in the short run;
- The same horizontal drilling and fracturing techniques that have opened the Marcellus Shale field are being adapted to exploit other formations in southern West Virginia, potentially resulting in greater production per well and more attractive profit margins;
- Drilling in the Marcellus Shale fields may slow in 2011-2012, somewhat reducing supplies. This could occur for a number of reasons:
  - Many operators hedged natural gas prices, but those hedges will be expiring in 2011 and 2012, making returns on investment somewhat less attractive;
  - Many operators committed themselves to drill a minimum number of wells in exchange for gaining leaseholds. Many of those commitments will be fulfilled in 2011-2012. As hedges expire and profits narrow, and with drilling commitments fulfilled, drilling in the Marcellus Shale may slow, further allowing prices to recover and costs to moderate; and
  - Several major operators secured large sums of money from significant investors to drill Marcellus Shale wells. That money is being "drilled up" and, again, as hedges expire, there might not be a profit margin sufficient to continue to attract these large sums of money.

If drilling in the Marcellus Shale field slows, supply will ease, costs for exploration and production should decline, and if prices recover even modestly for the reasons stated above, drilling in southern West Virginia again will become profitable.

Wishful thinking? Perhaps. But this is what many experts forecast for the 2011-2012 horizon. Those of us who operate in southern West Virginia certainly hope something like this comes to pass. Only time will tell when "the South will rise again." V

Getting Rid of the Waste: Partitioning the Oil and Gas Estate

J. Breckenridge Martin, Partner
John C. Hudson, Associate
Bowles Rice McDavid Graff & Love LLP

J. Breckenridge Martin is a partner in the Bowles Rice Parkersburg office and concentrates his practice in the areas of business and tax planning, commercial transactions, health care and real estate.

Mr. Martin assists clients with creation, operation and dissolution of corporations, partnerships and limited liability companies and represents buyers and sellers in the transfer of business interests. He represents clients in the acquisition, sale and development of commercial real estate and construction projects. He also assists banks and borrowers with commercial loan structuring, documentation and collateral issues.

Mr. Martin earned his bachelor of business administration degree from the University of Georgia, and earned his law degree from the West Virginia University College of Law.

He is a member of the board of directors of the Blennerhassett Historical Foundation and the West Virginia Land Trust, and he is the current vice-president of the Mid-Ohio Valley Estate Planning Council.

John C. Hudson is an associate in the Parkersburg office of Bowles Rice and concentrates his practice in energy law, construction law and real estate law.

Mr. Hudson received his bachelor of arts degree in international political economy from Fordham University in 2005 and earned his law degree from the Thomas Goode Jones School of Law in 2010.

Mr. Hudson is a member of the West Virginia State Bar and serves as secretary for the Wood County Bar Association. He also is a member of the Boy Scouts of America.

The Marcellus Shale presents another exciting time for the West Virginia oil and gas industry. However, in West Virginia, where production of oil and gas without the unanimous consent of all owners can be considered "waste," and where even an owner of a *minor* share of oil and gas in place can effectively prohibit oil and gas development, producers often face some very real challenges and complications. West Virginia's Partition statute (*W. Va. Code §37-4-1, et seq.*) may provide a solution.

For West Virginia developers and landowners alike, the Partition statute may hold one key to unlocking the development and profitability of this valuable resource, allowing landowners and developers to realize the maximum profitability of otherwise undeveloped resources and assisting the State in coming to the forefront of energy production.

While the Partition statute is more commonly used to resolve issues concerning the use and ownership of the surface of real property, a co-owner of oil and gas under the surface is entitled to compel a partition of that estate as well. A partition is the division of concurrently owned real estate into the co-tenants' respective fractional shares, and if the land cannot be fairly divided, then the entire estate may be sold and the proceeds appropriately divided. As with a partition of a surface estate, the primary goal is to encourage the free transfer and economic use of property which has come into divided ownership, where the owners are unable to agree on a common plan for the use or development of the property and, as a result, where nothing is done to benefit anyone's interests.

Partitioning the oil and gas estate presents unique issues for courts that may not generally exist in the partition of a surface estate. For example, West Virginia's long history as an energy state often means that oil and gas estates were severed from the surface in the early 1900s or even before, and the ownership may have become so splintered over the years that it is time-consuming, costly and

sometimes even impossible to identify, locate, and then serve all of the owners, each of whom would be a necessary party to the Partition suit. A thorough title examination and the appointment of a guardian *ad litem* to represent any infant or unknown owners are a must. And, if the fractional shares involve the ownership of just oil or just gas, dividing sale proceeds among such different estates can be challenging.

Likewise, some of the remedies provided for in the Partition statute may not be suitable. As noted above, the Partition statute provides that (1) the property can be partitioned in kind (or physically divided) among the co-owners in relation to their interests; or (2) when a physical division cannot be conveniently made, the entire estate may be sold or allotted to the highest bidder. In an oil and gas partition, it would be difficult to imagine a scenario where it would be convenient (or fair) to physically divide small fractional interests in a tract and also ensure that each party has relatively equal opportunities to produce fugacious minerals like oil and gas, not to mention ensuring equal access and proximity to viable well sites, water, rights-of-way, pipelines and meters.

What seems beyond dispute, however, is the appropriateness of using the Partition statute to, in effect, compel the production of oil and gas. Every owner of oil and gas in place has a statutory right to have a court consider the partition of their mineral rights. West Virginia law combines the rule of capture with the rigorous requirement that oil and gas can be produced only upon the unanimous consent of all owners. Doing nothing, therefore, could be wasteful by itself. The Partition statute may provide West Virginia producers (and owners of the oil and gas who would like for them to develop their minerals) with a way to further their interests.

The Marcellus Shale has received a great deal of attention and may prove a deciding factor in the economic future of West Virginia and its citizens. For West Virginia developers and landowners alike, the Partition statute may hold one key to unlocking the development and profitability of this valuable resource, allowing landowners and developers to realize the maximum profitability of otherwise undeveloped resources and assisting the state in coming to the forefront of energy production. With the Partition statute in place, West Virginia citizens and businesses need not fear this moment of opportunity in oil and gas exploration will be lost to waste.

Regulation of Oil and Gas – What Else Can Happen?

Sara G. Smith, President
Smith Management Group

Sara G. Smith is the president of Smith Management Group, an environmental and energy development consulting firm. She graduated from the University of Kentucky College of Law in 1985, where she received the first legal fellowship granted by the Institute for Mining and Minerals Research under Title III of the Federal Surface Mining and Reclamation Act.

Prior to joining SMG in 1991, she practiced general corporate law. While at SMG, Ms. Smith was the principal responsible for the development of Kentucky's Energy Project Site Bank for renewable, nuclear and coal gasification energy projects. She also served as an organizer and the facilitator for Kentucky's Workgroup on Legal Issues of Carbon Sequestration and was a primary author of that group's report issued in January 2010.

Ms. Smith is a member of the Cross Cutting Issues Technical Work Group for Kentucky's Climate Action Planning Council and serves on the Advisory Board for the Center for Applied Energy Research.

If you do not like where the regulation of oil and gas exploration and extraction is going, wait just a few minutes, and it will change. The on-shore oil and gas industry has seen an upswing in recent years, especially in shale gas development in the Marcellus, Barnett, Haynesville and other natural gas shale finds and the development of drilling technology that brings these resources within economic reach. However, regulatory and public attitudes about oil and gas production are in flux. In order to manage these changes, the industry must stay engaged with efforts to examine air, water and greenhouse gas effects of exploration and production.

Attitudes about energy production appear to be particularly subject to swings based on the news. The deep water Gulf oil spill resulted in a halt to deep water off-shore drilling, creating additional focus on environmental issues associated with oil and gas production, and increased pressure on production and supply from on-shore sources.

In the past several years there has been an improvement in the general public's attitude toward nuclear power. It is undeniable that with over 100 nuclear power plants in the United States, only one, Three Mile Island, has had a significant issue. However, the earthquake and tsunami in Japan appear to have dampened the public's interest in new nuclear facilities.

During the past several years, the various shale plays have received a lot of publicity, although not always positive. Developers are faced with a ban on hydraulic fracturing in New York and some Pennsylvania communities, at least for a while. Pennsylvania and West Virginia are studying the matter, as is the Environmental Protection Agency (EPA), with a recent information request and the upcoming study on the impacts of hydraulic fracturing on drinking water. New rules on drilling are resulting in lower maximum allowable well pressures, higher standards for well pipe and cement and the obligation to report migration of gas into water wells, and reporting on chemicals used in wells. Industry has been concerned with the requirement to disclose hydraulic fluid formulas. That concern may be addressed by an agreement that the formulas will be considered proprietary, but the individual chemicals in formulas are to be disclosed.

A deeper issue, that impacts all fossil fuel development and use, is our uncertain energy policy, both in the United States and world-wide. Greenhouse gas (GHG) policies have been adopted by only some of the countries with large energy appetites. It is clear that natural gas has a GHG advantage over coal, but it is still a fossil fuel that

will eventually be regulated. Low and stable prices for natural gas in recent years, combined with the higher GHG penalty coal carries, have resulted in new electricity generation being planned as gas base load where coal once prevailed.

Oil and gas production is subject to regulation on several fronts. The basic environmental regulatory programs impacting exploration are the Clean Water Act (CWA) and Safe Drinking Water Act (SDWA). Each and every well is subject to National Pollution Discharge Elimination System (NPDES) discharge permitting, stormwater issues and, in some cases, injection well permitting. Hydraulic fracturing was specifically exempted from injection well regulation by the Energy Policy Act of 2005 unless diesel is used as an injection fluid, in which case it comes back in as a Class II well. Focusing on these water statutes in no way diminishes the operator's responsibilities to properly permit, bond and construct the wells under state law. Nor can we ignore new requirements to inventory and report GHG emissions.

In addition to water regulation, there are new and more complex rules governing disclosure requirements for public companies under the Securities and Exchange Commission rules. EPA and many of the state environmental agencies are focusing on emission of air toxics associated with production. For example, the Texas Commission on Environmental Quality (TCEQ) is conducting a sampling program associated with 23 Texas counties in the Barnett Shale development area to establish what, if any, air toxics emissions are associated with exploration and production. Preliminary results did not indicate a significant danger, but did support longer term monitoring. Resulting regulations will not be isolated to Barnett Shale fields but will likely impact the industry across the state.

It is important to recognize that when a regulatory agency asks for information – whether through an information request like that conducted by EPA in late 2010 with drilling and production leaders, the GHG inventory and reporting rule or the TDEC study – there is likely a regulation following close behind.

On February 28, 2011, the EPA submitted its Draft Hydraulic Fracturing Study Plan for review by the Science Advisory Board. The purpose of the study is to answer the following questions:

- Can hydraulic fracturing impact drinking water sources?
- If so, what are the conditions associated with the potential impacts on drinking water resources?

Earlier commentary by the Science Advisory Board recommended a life cycle approach, with five to ten in-depth studies at locations considered to be representative of the regional variety of hydraulic fracturing across the country. EPA expects to begin the study in late 2011, with results available in late 2012. Once completed, the study will result in additional regulations under the CWA and SDWA that will impact hydraulic fracturing practices. The industry must stay deeply involved in the study and resulting evaluation process.

Change in oversight and regulation is impacting the industry on all fronts. Additionally, both the environmental community and the plaintiffs' bar are engaged at an unprecedented level. The industry has to stay engaged with these changes in order to remain viable, productive and profitable – and to provide the energy resources our region and country need. V

Still Making Deals After 40 Years

Mike Ross, President
Ross & Wharton Gas Company

I.L. "Ike" Morris, President
Waco Oil & Gas Company, Inc.

Mike Ross is president of Ross and Wharton Gas Company and chairman of the board of Mike Ross, Inc.

In 1971, Mr. Ross and his partner, Robert Wharton, borrowed $3,000 to buy some "old" production wells. Together, they built a company which today provides livelihoods for 20 full-time employees and many other independent contractors throughout West Virginia.

In 1992, Mr. Ross was elected to represent the 15th District in the West Virginia Senate. During his time in office, he served as chairman of Transportation and Infrastructure, Rule-Making and various other committees. He was a key supporter of the Medicaid Waiver Program, introduced a bill that created family restrooms along West Virginia's interstate highway system and worked hard to pave so-called "orphan" roads, providing improved access to people living in remote areas of West Virginia.

In April 2011, Mike and Joann Ross donated $1 million to the WVU Children's Hospital and the WVU Department of Pediatrics to support the treatment and education of children with diabetes and fund pediatric diabetes research.

I. L. "Ike" Morris is the owner of Waco Oil & Gas Co., Inc., which was incorporated in 1975 in Glenville, West Virginia, and today employs approximately 70 area residents. In addition to his work in the oil and gas industry, Mr. Morris's business ventures have included coal mining, stone quarries, a fitness center, restaurant, lounge, automatic car wash and commercial and residential real estate.

Mr. Morris serves on the board of directors of United Bank and was appointed by the Governor to the West Virginia Public Energy Authority. He is a former board member of Alliance Petroleum Corp. in Canton, Ohio, and the West Virginia Oil and Gas Commission. He was honored as the 1994 West Virginia Oil & Gas Man of the Year, the 25th Annual Honorary Italian Man of the Year at the WV Italian Heritage Festival and named Gilmer Countian of the Year.

Mr. Morris and his family serve both Glenville State College and the communities in Gilmer County through their active support and philanthropy. They provided the funds for the installation of artificial turf and other improvements at the Glenville State College football stadium, now named Morris Stadium, and recently constructed the Sue Morris Sports Complex, which provides state-of-the-art sports facilities for softball and baseball teams.

Mike Ross and Ike Morris, two legends in the oil and gas industry in and around Appalachia, first met at industry meetings in the 1960s. More than 40 years later, they are still active in their own very successful businesses, partners in a number of projects, and the best of friends. Both agreed to provide their thoughts on the West Virginia oil and gas industry – past, present and future – *and* each other.

How did you first get started in the oil and gas business?

Mike: I grew up in Coalton, West Virginia in a big Italian family – my dad was an immigrant and worked in the coal mine, my mom was a full-time homemaker and there were 14 children. I learned at an early age what competition meant! My work ethic was instilled in me at an early age by my parents.

I graduated from high school and then went on to heavy equipment school. I was driving a bulldozer, making three dollars an hour and I decided to take a job as a well tender, making $1.25 an hour with Waverly Oil Works out of Pittsburgh. People around Coalton thought I was crazy to climb off that bulldozer! Waverly sent me to school to learn more about drilling, fracturing and cementing a well. Later, I started buying up leases and drilling my own wells. After a year, I'd developed a pretty decent business.

Ike: I come from a family of oil and gas people. I was born in Oklahoma, and then my family moved to southern Illinois. I moved to West Virginia on my own in the '60s, during a natural gas boom. Back then, I did a lot of work for Washington Gas in Romney, West Virginia and the work in the winters was tough. I told my kids that it was so cold working on those rigs that it took until August before I'd thaw out! I met Mike Ross in the '60s, and we've been making deals ever since.

Is there something about the gas boom of the early 1960s that really stands out in your memory?

Mike: There was a whole different pace back then; lots of shallow holes being drilled; lots of small rigs working. It's a different scale to what's happening today. At the end of the '60s you couldn't believe how the price of equipment dropped. The bust followed the boom and there were deals to be made then, too. Then there was a ruling in 1976 from the United States Supreme Court, thanks to IOGA, that terminated the Life of the Lease in contracts. It opened the market up. There was a lot of excitement – lots of new players, many from out of state. In 1976, gas was selling for 29 cents; by 1984 it had jumped to 10 dollars. Fortunes were made and fortunes were lost.

What was the biggest lesson you learned in your early days in business?

Ike: Building relationships with people.

Mike: Don't be afraid to work yourself – like the song says, "Don't get above your raisin'."

What would you say to someone who wants to get started in the oil and gas business today?

Ike: This Marcellus Shale is just the biggest thing. Maybe there was something before I got here in the '60s, but nothing since then has been such a tremendous opportunity. This is so great for the whole state and the people. The money that this will generate in West Virginia will provide teachers, sewer systems, water systems...just everything... and it's going to be here for a long, long time.

Mike: Try to get employed with a good company where you can learn something. Get up early and work late – that's what J. Paul Getty said. The biggest challenge today is the work ethic. Do a great job and the money will follow. Be fair in your deals. Ike and I have been doing land deals together for 40 years. We got acquainted in the 1960s, attending association meetings and we're still doing business 40 years later. The partnership has been wonderful.

What's been the biggest change in the industry in the last 20 years?

Mike: Technology – and horizontal drilling. It's brought a lot of big new money and there are companies drilling in West Virginia that we never had before. It makes it tougher to buy leases – the little guy can't compete as well.

Ike: Regulations. Folks need to understand, when they talk about adding more regulations to any industry, that it is the consumer who ends up paying for everything. Companies may complain about the extra costs of regulations, but they just get passed on to the consumer – at the gas pump, for home heating, everything. You can pay it Monday or you can pay it Friday, but you're going to end up paying for it.

Have you ever considered selling it all and just walking away – doing something totally different?

Mike: Not lately. I've been "retired" for over 20 years, but I'm still excited when I get up in the morning and think about what we're going to do today.

There are a lot of things I still want to do. I'm still buying deals, still looking. If I don't make a deal a week, I feel bad. The best deal I ever made was on a Friday afternoon. I hadn't made a deal all week. I got a call about a deal and I told the man: I'm going to make you an offer. I'm a quick study – just from gut and experience, I had a good idea what kind of income that property would bring. He took the deal. Another company had been after the same deal, but they took too long. They came to me within a week and offered me twice what I paid, but I turned them down. Ten years later, I still own it.

Ike: Oh, every once in a while, but my wife says I'd never be happy being retired. She's been here all along, so I guess she'd know.

Is there as much opportunity for success in the oil & gas business in WV now as there was when you started?

Mike: Yes! All the deals aren't gone. There will be deals around long after the money's gone, if you're not afraid to work...and sometimes you have to gamble. I guess you could say I'm a "conservative gambler."

Ike: There are a lot more big companies in the state now – bigger players. It's a lot more competitive, but there's still opportunity if you're willing to work hard.

What are your thoughts on the Marcellus Shale development in West Virginia?

Mike: To not take advantage of Marcellus would be a disservice to the state and our people – directly and indirectly. I think the controversy about Marcellus drilling is a matter of education. Folks just don't understand. I've taken people out in the field to educate them about what is *really* happening.

Ike: There are folks out there who are saying things – or have people worrying about things – and this industry is getting a bum rap. This Marcellus Shale drilling is a huge opportunity for the state. I've been around here for 40-plus years. People need to stop and think: do you really think we are going to intentionally do something wrong that is going to hurt people, hurt our neighbors, hurt our communities?

What is something about Ike Morris that folks probably don't know?

Mike: He's a very generous man. He likes to give and he cares about people. He knows how to make a great deal and he likes to do things in a big way. We both like a little controversy and a good debate.

How would you describe Ike Morris in one word:

Mike: Aggressive.

What is something about Mike Ross that folks probably don't know?

Ike: Mike is a great businessman. A fair man. He's a great trader. He's much more conservative than I am. He's not easy to describe – he's a complex man.

How would you describe Mike Ross in one word:

Ike: Friend.

Was there ever a time when you thought you should have done something else?

Ike: Never.

Mike: No – I'd do it all again. V

Owners of Natural Resource Properties To See Tax Changes

Floyd McKinley Sayre, Partner
Bowles Rice McDavid Graff & Love LLP

Floyd McKinley "Kin" Sayre is a partner in the Bowles Rice Martinsburg office. He concentrates his practice in the areas of commercial and finance law, tax, government relations, real estate and small business development. He also is a certified public accountant.

Mr. Sayre has been the town attorney for Mabscott, West Virginia, since 1998 and was the city attorney for Beckley, West Virginia, from 1989 to 1996. He is a past attorney for the West Virginia State Tax Department. He is a former adjunct faculty member of Bluefield State College, Mountain State University and Concord University.

He authored "*Municipal Law: West Virginia State Bar Practice Handbook*" and has been a presenter for continuing legal and professional education seminars on topics including tax; municipal law, eminent domain, real estate and taxation.

Mr. Sayre has served on the Real Estate, Zoning and Land Use Committee of the West Virginia State Bar since 1999. He is a former member of the West Virginia State Bar Board of Governors, the West Virginia Ethics Commission and the Young Lawyers Executive Committee. He currently serves on the West Virginia Home Rule Board.

He earned both a bachelor of science degree and an MBA from West Virginia University. He received his law degree from the University of Arkansas in 1986.

With the new assessment year, the rules of engagement have changed for purposes of assessing and contesting the assessment of property for *ad valorem* property taxes. For several years, many organizations have worked with the West Virginia State Tax Department to streamline and improve the process. These reforms create new dates, obligations and opportunities for taxpayers. The new reforms will provide a more orderly, objective and fair review than under the current system.

The first change that taxpayers need to observe is the date on which they will be required to file property tax returns. Owners of natural resource properties must initially report their values to the Tax Commissioner and, if requested, to the county assessor. Owners of coal properties are required to file returns on or before May 1, and in the case of industrial and non-coal natural resource properties, the reporting deadline is August 1. The Tax Commissioner may extend these dates, upon a showing of good cause, an additional 30 days. Except for natural gas and oil-producing properties, the values reported are as of July 1 of the same year. The valuation of producing natural gas and oil properties is based on production during the calendar year preceding the July 1 assessment date.

The Tax Commissioner is required to provide owners of coal properties with the tentative taxable values on or before October 15. For owners of other natural resource properties, these values are reported on or before December 1. The owners of industrial and coal properties, and the assessors in the counties where such property is located, have until November 15 of the same year to seek an informal review of those tentative taxable values with the Tax Commissioner. The Tax Commissioner is required to decide on any requested adjustments on or before the following January 15. Regardless of whether such a property is under informal review, the Tax Commissioner is required to give written notice of the final taxable values of all industrial and natural resource properties to the taxpayers and the assessor of the county where they are located by December 15.

Owners of natural resources properties, as well as other property owners, are entitled to written notice of proposed increases in the aggregate assessed value of such property that is more than 10 percent in the immediately prior year. Such notices must include, in addition to the relevant value information, the tax rate classification assigned to the property.

If a taxpayer is aggrieved by the proposed assessment of their property, a review of the same by the County Commission may be requested. The written request for review must be filed by February 20. Taxpayers may request a review on any proposed assessment, not just limited to properties that are subject to an increased assessment. If the County Commission is still in session as a Board of Equalization and Review, the review can be addressed prior to the Board's adjournment on or before February 28.

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The new law gives the taxpayer an option of requesting a delayed review when the County Commission meets as a Board of Assessment Appeals in October of the same year. One of the problems that taxpayers have faced under the old law is the short window to prepare for an appeal. If the taxpayer had not anticipated the proposed increase in assessment and did not have the needed information to contest the assessment prepared in advance, it becomes difficult to present clear and convincing evidence of the true and actual value of the natural resources properties. The board of assessment appeals will allow the taxpayer time to collect the needed geological, cartographical or financial information to establish value.

If a taxpayer chooses this option for review, he will be obligated to pay all taxes as they come due, notwithstanding the fact that the matter remains under review. In addition, the taxpayer must agree to accept relief resulting from a subsequently reduced assessment in the form of a credit against future years' taxes. The board of assessment appeals must meet no sooner than October 1 of the tax year and must conclude its work by October 31, unless a majority of its members vote to extend its term.

In cases where the board of equalization has elected to increase the proposed assessment, the board is required to provide five business days' prior written notice of such increases. Because of the short window to appear and contest the proposed increase, the taxpayer has the option to have the proposed increase reviewed in February, by the Board of Equalization, or October, by the Board of Assessment Appeals.

Another area of taxpayer relief deals with the appeal to circuit court from the decision of the Board of Equalization. Under the prior law, taxpayers were required to perfect their appeal and file the record within 30 days from the adjournment of the Board of Equalization or receipt of an order from the Board of Assessment Appeals. The new law allows the taxpayer to file the record 30 days after filing their appeals with the circuit court. This additional time can be critical to get transcripts and copies of documents presented at the hearing.

The second major change in the appeal process will allow the circuit court to remand the matter back to the County Commission if it finds that, for any reason not involving the negligence of the party contending the same, the original record is inadequate to decide the merits of the appeal. If the court remands the matter back to the County Commission, it has 90 days to schedule a supplemental hearing.

A possible new area of taxation of natural resources properties is the issue of "Chattel Real," as it applies to the coal industry. Currently producing oil and gas properties produce two property tax tickets. The assessor issues one ticket to the mineral owner and a second to the owner of the working interest. Several assessors and county commissions have approached the Property Valuation Commission to apply these same standards to active coal mines. The assessors want the current property owners to continue to get the same tax ticket that they currently receive and issue a second "Chattel Real" ticket to the company operating the coal mine. Presently, the state tax division has taken the position that it does not have the authority to tax coal properties in this manner. Over the next few years, it will be interesting to see how the legislature and other stakeholders address this issue. W

Mission One: Promote and Protect

Charlie Burd, Executive Director
West Virginia Independent Oil & Gas Association

Charlie Burd joined the Independent Oil and Gas Association of West Virginia, Inc. (IOGA) as its executive director in 2002. His duties include managing the operations of the 575-member trade association and overseeing IOGA's legislative efforts.

Prior to joining IOGA, Mr. Burd spent 29 years with Hope Gas (CNG and then Dominion Resources), where he held a variety of operations, sales and management positions.

Mr. Burd holds an associate degree in higher accounting from Mountain State College and a BA from Glenville State College. He also is a graduate of the University of Oklahoma's Economic Development Institute and was recognized for his thesis work relating to the 1990 Clean Air Act amendments. He also has earned the distinction as a "Certified Economic Developer."

In conjunction with his IOGA duties and responsibilities, Mr. Burd serves on the Industry Advisory Board for the Department of Petroleum and Natural Gas Engineering at West Virginia University; is chairman elect to the Public Outreach Committee of the Interstate Oil and Gas Compact Commission; serves on the Independent Petroleum Association of America's Liaison Committee, and is actively involved with the West Virginia Chamber of Commerce and the West Virginia Society of Association Executives. He is a 2001 graduate of Leadership West Virginia.

The Independent Oil and Gas Association of West Virginia, Inc. (IOGA) was formed in 1959 and is comprised of nearly 600 independent oil and gas producers, marketers, suppliers, royalty owners and service companies engaged in the exploration, extraction, production and transmission of natural gas and oil.

In 1991, IOGA approved a simple mission statement, clearly defining the Association's purpose: "Promote and protect the West Virginia oil and natural gas producing industry." To that end, leadership established four goals:

1) To identify and educate IOGA members to the challenges and opportunities confronting the industry;
2) To encourage and project a unity of purpose among the IOGA membership;
3) To educate the general public and elected and appointed representatives about the importance of the industry; and
4) To protect and improve both the business and natural environment of West Virginia.

Challenges and Opportunities:

IOGA's leadership works diligently to identify the challenges and opportunities that confront this industry on a daily basis. For many years, the oil and gas industry operated below the radar, isolated from view of most passersby. Few truly realize and understand that over 50,000 oil and gas wells have been drilled in the state. Oil and natural gas from these wells is collected through an elaborate gathering pipeline system and transported mainly to markets outside West Virginia, to provide energy to the entire eastern seaboard and other markets.

One of the greatest challenges facing all producers in West Virginia is the ability to drill and access space or "capacity" on gathering and transmission lines. Throughout time, natural gas pipelines were built and sized to handle the anticipated output from certain production fields or

IOGA WEST VIRGINIA

geographic areas. This situation can be compared to the construction and expansion of interstate highways. When the number of cars traveling on certain highways exceeds the roads' capacity, we face traffic jams and delays until the roads are improved and expanded.

Due to more and better drilling techniques, the amount of natural gas production now greatly exceeds the capacity of the existing pipeline infrastructure in many parts of the state. Several companies have recently announced projects to increase pipeline capacity, which will be very helpful.

IOGA works with major transporters of natural gas and the oil and gas marketing entities to educate operators on the concepts associated with getting their gas to market. Gone are the days of simply drilling and "turning in a well." Moreover, inside this effort are the additional challenges of getting and paying for different levels of access (firm, secondary firm and interruptible capacity options), compression, metering, service fees schedules, telemetry and repairs, but to name a few.

Outside of gathering, producers are facing an ever growing scrutiny on the environmental front. Marcellus drilling activity has created the need for greater accountability for water, chemicals used in the fracturing process, pits and impoundments, and roadways. Fear and misinformation may well be our greatest challenge on these fronts,

but the potential opportunities are exciting. With the discovery in Texas of how to efficiently and economically harvest the vast natural gas reserves contained in shale plays, the world as we knew it has changed forever. Up until a few years ago, the vast majority of wells drilled in West Virginia and throughout the country were drilled vertically, artificially stimulated and produced. The more efficient use of hydraulic fracturing will not just open up the Marcellus Shale here in West Virginia, but may provide the opportunity go back and rethink how to better produce other production fields or formations.

Other opportunities exist to provide a win-win between the industry and the landowner. As we go forward, the latest development strategies call for a smaller physical footprint on land use, multiple wells from a single land disturbance, the reuse of frac water, the further evolution of closed loop systems, and reuse or disposal of produced water into disposal wells.

Unity of Purpose:

IOGA has stayed focused on its roots – the independent producers who simply drill and produce oil and/or natural gas for sale to others. Virtually every IOGA-initiated program is offered to help or assist all members. These include annual winter and summer meetings, its annual equipment show and seminars on financial, tax, environmental and safety-related topics.

In addition, IOGA administers the largest health, dental and eye care insurance program of any association in West Virginia and has invested nearly $100,000 in its annual scholarship program, open to all graduating senior students of IOGA member companies.

To Educate:

IOGA's educational outreach goes beyond its membership. IOGA's website includes information about the Association's history, its leadership, the insurance program, archived newsletters, current events, industry links, committees, and much more. Finally, IOGA is proud of its "Action Alert" system, which provides communication with every eligible member via e-mail blast.

From a legislative perspective, IOGA has amassed one of the most respected lobbying teams in West Virginia. IOGA is proud of its record with the Legislature and works diligently to maintain those relationships.

To Protect and Improve the Business and Natural Environment:

In order to stay active in areas not directly related to the production of oil and gas, on a statewide level, IOGA maintains memberships in the West Virginia Chamber of Commerce, the West Virginia Business & Industry Council and the Polymer Alliance Zone of West Virginia. On a national perspective, IOGA actively participates in leadership positions, committee assignments, and as advisor with the Independent Petroleum Association of America (IPAA), the Interstate Oil and Gas Compact Commission (IOGCC) and the Association of Cooperating Associations. It also maintains close relationships with other oil and gas trade associations, particularly those with Pennsylvania, Ohio, Virginia, New York and Kentucky.

IOGA is dedicated to promoting and protecting all independent oil and gas producers in West Virginia. To that end, IOGA is proud to be "The Voice of the Independent."

Marcellus Regulation Produces Insurmountable Divide in Legislature

Philip A. Reale
Attorney At Law

Phil Reale is an attorney and government relations consultant who has vast experience in oil and gas matters. He is a 1977 graduate of the West Virginia University College of Law and, upon graduation, engaged in the general practice of law in central West Virginia, including acting as general counsel for Waco Oil and Gas Company in Glenville, West Virginia, from 1982 to 1988.

During that time, he became an active member of the Independent Oil and Gas Association of West Virginia (IOGA), including one term as its president. He has served as lobbyist for both IOGA and the West Virginia Oil and Natural Gas Association and serves on the board of directors of Alliance Petroleum Corporation.

In 1988, Mr. Reale chaired the transition team for the incoming West Virginia Governor, Gaston Caperton and ultimately served the governor as his chief of staff. He has served the state in a variety of capacities, including as representative to the Interstate Oil and Gas Compact Commission, of which he was vice chairman. He also co-chaired the Higher Education Advocacy Team and served two terms as chairman of the board of directors of the State College System of West Virginia.

Mr. Reale has served as chairman of Special Olympics of West Virginia, is an avid supporter of youth athletics and an active member of several non-profit organizations.

One of the most high-profile issues during the recently concluded 2011 West Virginia legislative session involved regulation of horizontal drilling in the Marcellus Shale. The multiplicity of related issues will be briefly mentioned in this article, but it may help to understand the various contexts in which the issues were considered.

First, the development of the Marcellus Shale gas field in West Virginia holds vast economic potential. Some say it will be the greatest economic development opportunity in a generation. According to a 2010 study conducted by the National Energy Technology Laboratory of the U.S. Department of Energy, cumulative production of shale gas in West Virginia will total about 30 Tcf, valued in excess of $200 billion, by the year 2020. In order to realize that potential, billions of dollars of risk capital will be invested in drilling, pipelines, compressor stations and natural gas processing plants. Forecasters estimate that nearly 17,000 new jobs will be created by the year 2020 as a consequence of the Marcellus Shale activity.

Issues associated with protection of the environment and maintenance of public roads also were discussed and considered during the legislative session. Proposed changes in permitting and regulation of natural gas drilling resulted in a highly technical debate within the industry itself, as large and small producers took varying positions. While conventional drilling has long been effectively regulated under West Virginia law, the drilling of the Marcellus Shale involves different extraction methods such as hydraulic fracturing, which utilizes large volumes of water. Crafting legislation which would not impose undue regulatory burden on conventional operations, while reasonably regulating unconventional drilling, was not a simple task to complete.

The issues which the legislature attempted to address were many. None were more controversial than those dealing with forced pooling of natural gas and unitizing leases, which many believe is desirable for the efficient and orderly development of natural gas resources. Not only did this issue spark controversy between large and small

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operators, but the complicated concept was not well-received by the landowner community. For much of the first 50 days of the session, a debate over forced pooling and unitization was waged – primarily within the House of Delegates Judiciary Committee. This issue created what proved to be an insurmountable divide, and attempts to reach a policy decision on pooling and unitization were abandoned in each House of the Legislature.

With multiple bills introduced in each House, it was the Senate that advanced Committee Substitute for Senate Bill 424, proposing a new regulatory framework aimed primarily at horizontal drilling. No similar House bill was advanced, although one was worked on extensively in the House Judiciary Committee. Many meetings of that Committee were consumed by the issue of pooling and unitization, only to have language covering that subject amended out of the bill. When Committee Substitute for SB 424 was ultimately dealt with by the House Judiciary Committee, those provisions were stricken, and House language on regulation of horizontal drilling was inserted. Ultimately, after considerable debate and intense lobbying, the amended version of SB 424 failed to advance in the House, and the bill died.

This leaves current law to continue, under which the Secretary of the West Virginia Department of Environmental Protection has inherent powers in the oversight of oil and gas drilling. Indeed, regulatory oversight of Marcellus Shale drilling under existing statutory authority has been occurring for the past three years. American humorist Will Rogers once said, "Just be glad you're not getting all the government you're paying for." In the case of regulation of the Marcellus Shale, only time will determine the truth of that adage.

Crafting legislation which would not impose undue regulatory burden on conventional operations, while reasonably regulating unconventional drilling, was not a simple task to complete.

Although a decision on forced pooling and unitization of leases and clarification of regulatory oversight were hoped for by many in the oil and gas industry, neither came to fruition. On the other hand, progress was made on an important, related issue. Ancillary to the production of natural gas in large volumes is the capacity to generate ethylene, a raw material for chemical and plastics manufacturing. The process of removing ethylene from natural gas is performed in a facility referred to as a "cracker."

Senate Bill 465, known as the "Cracker Bill," created the Marcellus Gas and Manufacturing Development Act, which provides eligibility for current tax credits to the oil and gas industry. For example, the bill clarifies that an ethane cracking facility is considered a manufacturing facility, thereby making the construction of an ethane "cracker" eligible for our state's Manufacturing Investment Tax Credit. Similar changes extend eligibility for Strategic Research and Development tax credits, salvage valuation, sales and use tax exemptions, etc. An initiative of Acting Governor Tomblin, Senate Bill 465 is hoped to be a catalyst for significant capital investment in the state. V

What's In It for the Surface Owner?

P. Nathan Bowles, Jr., Partner
Bowles Rice McDavid Graff & Love, LLP

P. Nathan "Nate" Bowles, Jr. is a partner in the Charleston office of Bowles Rice and concentrates his practice on natural resources, particularly oil, gas, timber and commercial litigation.

Elected in 1996 to the board of trustees of the Energy and Mineral Law Foundation, Mr. Bowles is an experienced lecturer on oil and gas law topics. He is an adjunct lecturer of Coal, Oil and Gas Law at the West Virginia University College of Law in Morgantown, West Virginia.

In recent years Mr. Bowles has concentrated on litigation involving property, especially oil, timber and gas rights, and contracts including insurance. He advises oil and gas clients, and their lenders, in transactional work and day-to-day matters, such as relations with surface owners and joint venture operations.

A graduate of the West Virginia University College of Law, Mr. Bowles earned his law degree in 1976 and prior to that received his bachelor of arts degree in philosophy in 1973 from Antioch College.

He is a member of various professional organizations including the Mineral Law Foundation and West Virginia Independent Oil and Gas Association. In 2001, Mr. Bowles was elected as the first president of Legal Aid of West Virginia, Inc., which then became West Virginia's state-wide program for civil legal services for the poor.

In the summer of 1922, in Wyoming County, West Virginia, John Laing, a coal operator, moved drilling equipment up a dirt road to the gate of a four-acre tract owned by Martin Lafferty. Mr. Lafferty owned only surface rights to the property. Mr. Laing leased the coal from the mineral owner and wanted to drill core samples.

After moving part of his equipment across the Lafferty surface, Mr. Laing found the gate locked. After Laing's workers forced the gate open, Mr. Lafferty or his brother, Rice, attacked the worker and threatened anyone else who would dare cross through the gate.

Rather than escalate the fight, Mr. Laing obtained a court injunction against the Laffertys, allowing the sheriff to arrest anyone who blocked the gate or interfered with the core drilling.

The Laffertys appealed to the West Virginia Supreme Court. They argued that owning the minerals gave no right to cross or drill on the surface above. In its 1924 decision – still cited today – the West Virginia Supreme Court upheld the injunction. The Court held that even though a severance deed says nothing about roads or gates, ownership of the minerals includes, by implication, the right to make reasonable use of the surface. *Squires v. Lafferty, 95 W. Va. 305, 121 S.E. 90 (1924)*

Eighty years later, in the summer of 2003, a well tender in Doddridge County went to a farm where the oil and gas had been severed from the surface. The previous winter, he had found the wells shut-in, and opened them back up. On this July day, the well tender passed through the front gate, but stopped and turned around. A large tree limb wedged between two boxes of swarming bees blocked the road. The well tender could see other hives placed further on down the road.

It did not take the Doddridge County Circuit Judge long to award an injunction against the beekeeper. The law in West Virginia is very clear. A mineral owner has the right to make "reasonably necessary" use of the overlying surface in order to develop the minerals.

Today, operators know that even though the rights of the surface owners are subservient to the rights of the mineral owners, they are still co-owners of the same land.

Ever since the law recognized separate ownership of minerals and the surface overlying those minerals, conflicts have risen between the different owners. In the past, people who lived in oil and gas country usually knew the rules and principles involved. Surface owners usually put up with drilling activities, knowing they had no real recourse, and operators usually paid a "going rate"– a flat amount – to affected surface owners. Today, operators know that even though the rights of the surface owners are subservient to the rights of the mineral owners, they are still co-owners of the same land.

Operators also recognize that a dispute avoided is a dispute won. The Independent Oil and Gas Association of West Virginia has even developed a formal program designed to improve relations between operators and surface owners.

Tensions still arise in oil and gas country. When drilling imposes burdens and inconveniences, surface owners can become emotional. Those emotions can lead to irrational and unlawful behavior. Some people may not realize they do not own the minerals under their property.

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Others may know in the back of their minds that they own only surface, but when they receive notice that someone plans to drill on their property, the division of ownership seems "wrong." A few years ago, a client encountered a surface owner who had been heard to vow that he would run off anyone who tried to drill on his property. After the drill site was staked, the operator found a piece of machinery located right on the spud site, with religious statuary placed in the surrounding woods. The surface owner also sought, unsuccessfully, a court order to revoke the drilling permit. In the end, our client drilled the well, but not before enduring a negative media campaign started by the surface owner, who accused the operator of intentionally drilling on a residential lot.

Surface owners have received some statutory protections in the past 25 years or so. For wells classified as "deep wells," an operator must obtain the surface owner's written consent to drill on the tract. This puts the surface owner in a position to negotiate for compensation and conditions, such as the location and construction of roads. Though Marcellus Shale wells may or may not be defined as "deep wells," industry practice is to reach agreements with surface owners before locating a Marcellus Shale drill site.

Surface owners in West Virginia also may receive compensation for certain damage, such as damage to crops and loss of use, without regard to whether the damage resulted from reasonably necessary use of the surface. The Oil and Gas Production Damage Compensation Act encourages producers to make reasonable offers for such damage. The Act allows surface owners to bring their claims to court or present them in what should be a less expensive arbitration proceeding.

We cannot predict now how the law may change over the next several years. We can say with some certainty that as the demand for Appalachia's natural gas increases, and as drilling operations grow in scale, conflicts with surface owners who do not share in production royalties will continue to occur, and must be resolved.

We recommend to our clients in the industry to resolve all conflicts as soon as possible, rather than allow them to fester and result in an adversarial proceeding in court or arbitration. Surface owners will normally find operators open to reasonable requests for compensation and cooperation in locating and building surface facilities. However, recalcitrant surface owners must recognize the operator's legal right to make reasonable use of the surface, and will indeed face consequences if they try to take the law into their own hands or otherwise resort to obstructionist tactics.

Married to the Marcellus

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capacity of 520 million cubic feet per day at Ft. Beeler. A 25-mile NGL pipeline will connect these facilities to our new fractionation facility, which will soon be under construction along the Ohio River in Marshall County. With a capacity of 12,500 barrels per day, that facility will offer truck, rail and river barge options to support transportation of natural gasoline, butane, purity propane, and other products to valuable markets.

We are excited about the prospects for the Marcellus Shale and especially for the rich gas region in West Virginia. We are looking ahead toward expanded cooperation with state and local governments, with the people of West Virginia and southwestern Pennsylvania and with the gas and oil industry, through which these encouraging developments are being made into reality. It is a strong, optimistic place to be, and as the nation reaches toward its economic recovery, we see nothing but good things ahead for the Marcellus Shale and the region.

Collaboration, Cooperation and Conservation: Why Not?

(continued from p. 33)

we can produce the basic chemicals that are the building blocks for a renewed chemical industry within our state. Propylene, methylene, ethylene and ethane oxide are the basic components of thousands of commercial products, and the ability to produce them in West Virginia is within our grasp. Standing alone, these chemicals in abundant quantities should provide a natural draw from the chemical industry to the state. Combine this capability with some effective economic development efforts, and I believe West Virginia will be able to attract a host of new manufacturing facilities which will insure our growth for the foreseeable future. This final example also embraces the concept of conservation. It takes our natural resources and uses them for their highest and best uses and, in this case, the state benefits with new jobs, increased taxes and a better future for all West Virginians.

With a lot of collaboration and cooperation among all parties involved, and making conservation a basic principle, I say to you, "Why not?"

Author's Note:
There are dozens of good ideas that support the concept of conservation, but time does not allow their discussion. I want to recognize West Virginia State Senator Brooks McCabe, who introduced a bill during the 2011 legislative session that included a tax credit for natural gas powered vehicles (something we should give serious thought in view of our large gas reserves) and a provision in the same bill that allocated/diverted some of the Marcellus Shale-related tax revenue to research and development to advance our state. We need to give greater consideration to a lot more of those kinds of innovative and "avant garde" ideas.

Much To be Gained by "Pooling" Together

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Britt Freund is a Bowles Rice associate and focuses his practice in energy law and coal, oil and gas matters.

Mr. Freund earned a bachelor of fine arts degree from Ithaca College in New York and his law degree from the Duquesne University School of Law in Pittsburgh, Pennsylvania. He is admitted to practice law in the states of West Virginia and Pennsylvania and before the United States District Court for the Southern District of West Virginia.

He is a member of the Energy and Mineral Law Foundation (EMLF) and is the author of several legal updates for the EMLF newsletter. He has assisted in representing the Independent Oil & Gas Association of West Virginia in Public Service Commission proceedings.

Pennsylvania Governor Tom Corbett recently proclaimed that, in spite of the oil and gas industry's seeming tolerance of a severance tax (which Corbett opposes), he understands that the tax would come with strings – forced pooling for Marcellus gas development – and the Governor opposes that.

An explanation of pooling begins with the rule of capture, a cornerstone in the development of oil and gas law. The rule of capture allows for an oil and gas operator to drill a well on a tract of land that he has rights to develop and to "drain" oil and gas which naturally flows from an adjoining tract. His neighbor's recourse is to do likewise. Excessive wells get drilled by competing oil and gas owners, all attempting to produce from the same pool. As a remedy, most states have enacted legislation that imposes spacing requirements for wells and unitization of real property tracts so that fewer wells are drilled to develop a particular field. Within a unitized field the various ownership interests are "pooled" so that each party benefits from production in proportion to the acreage each contributes to the unit.

Pooling and unitization occurs both voluntarily, under contractual agreements, and involuntary or "forced," generally via legislation that is concerned with the economic and responsible development of natural resources. The current strife over forced pooling stems from the various interests involved: working interest owners (operators) who may wish to control the development and royalty interest owners (landowners) who may or may not want their property developed and, in some cases, cannot be identified or found. With all of the various ownership interests involved come competing concerns. Simply, owners of real property do not want the government mandating what they must do with their property – unless of course, the mandates benefit them.

The challenge with unitization and pooling legislation is to ensure that the various owners and developers are equitably treated and have choices for participation and/or compensation. This challenge can be met. Both Pennsylvania and West Virginia have forced pooling and unitization statutes for drilling of deep wells. However, the Marcellus formation is not covered by these deep well statutes.

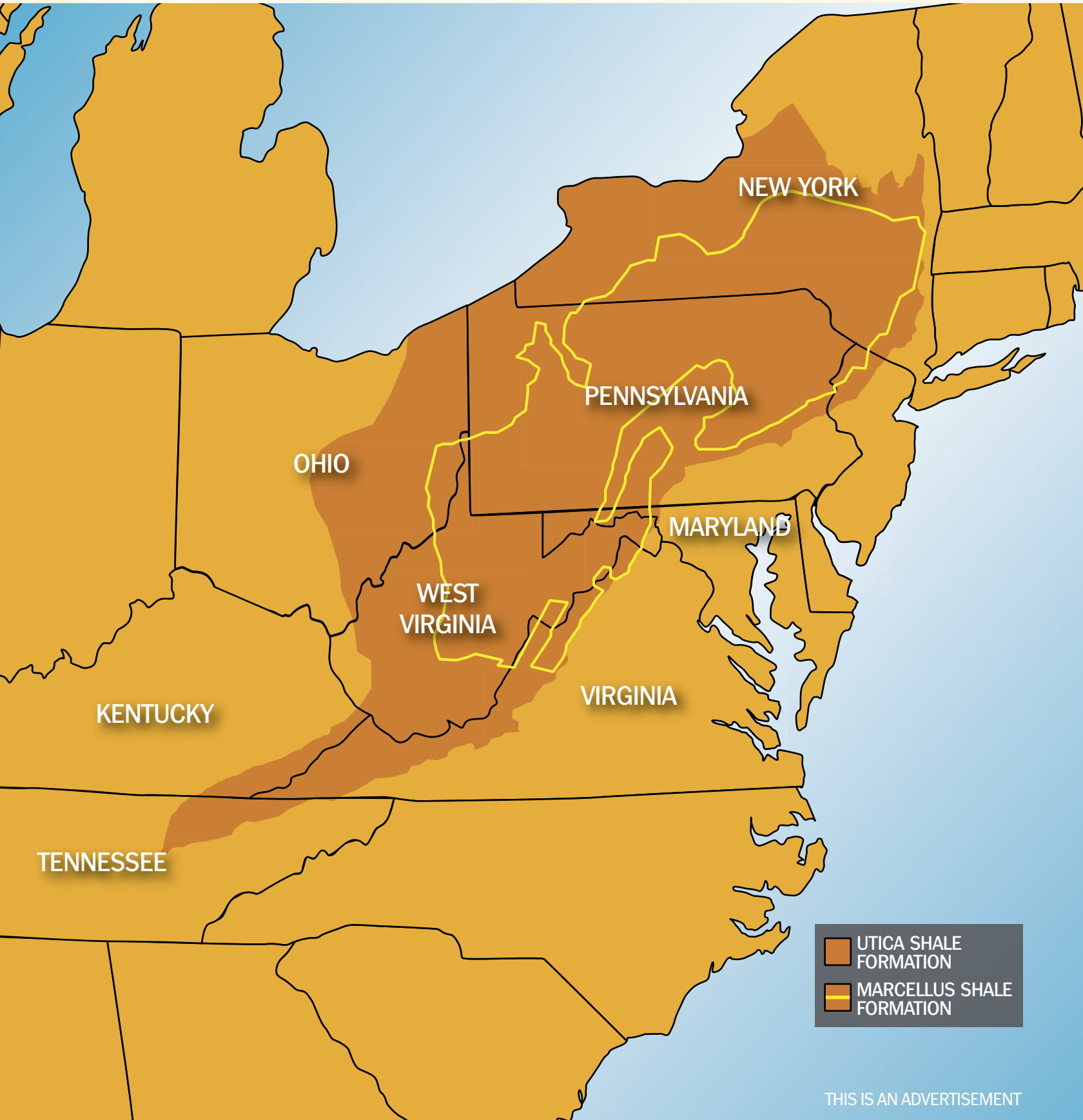
The pooling statutes provide options for operators on competing tracts to elect participation in unit development; or not participate, and thereby avoid contributing to the costs of development, but still be compensated (with a penalty for avoiding the risks associated with participation) once the unit begins producing at a profit; or to simply surrender their interest for "just and reasonable" compensation.

Likewise, royalty owners are compensated based on their leases and the percentage of acreage they own to the whole unit, and non-leased land owners receive a one-eighth royalty free from costs (on their royalty ownership) plus have the option of participating as a working interest owner (regarding seven-eighths of their ownership).

Forced pooling statutes were born out of necessity because of the elevated costs associated with drilling deeper and concerns for conservation. Similarly, with producing the Marcellus in Pennsylvania and West Virginia and potentially other shale plays in the region, horizontal wells allow for both economical development and conservative use of surface property. However, due to the costs associated with drilling a new horizontal well, the operator may drill up to two miles laterally and thus, the potential for encompassing multiple tracts increases.

Governor Corbett says he's against it – and West Virginia legislators recently saw another session come with no new legislation – but forced pooling of the Marcellus is inevitable. The boom is on and there is simply too much at stake to not have sensible regulation guiding it. Whether you are an environmentalist, an oil and gas developer, a landowner or all of the above, there is much to be gained by "pooling" together!

Energy Opportunities in Appalachia



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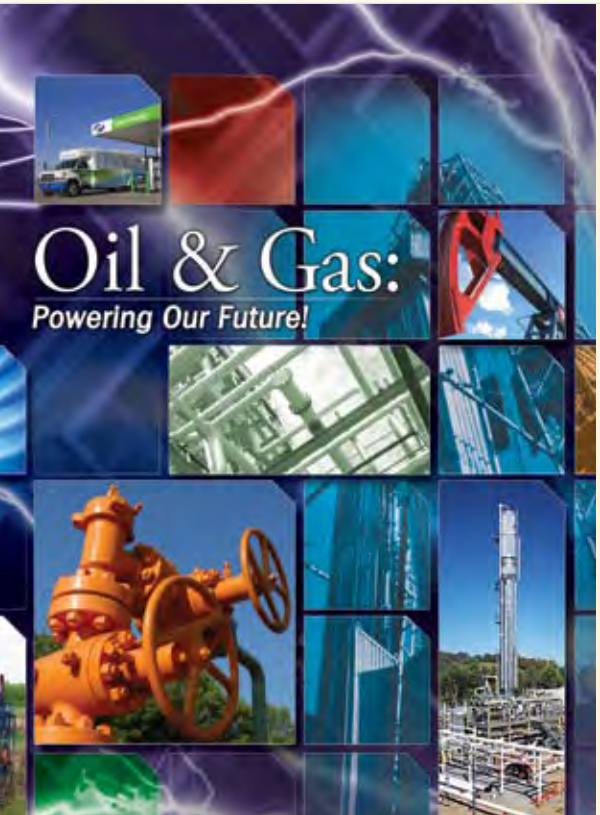

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